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A GUIDE TO  
**BETTER GARDENS**

1943

LITERACY  
EDUCATION

★ FEB 25 1943 ★

U. S. Department of Agriculture



**PORTLAND SEED AND PET STORE**

204 S. W. YAMHILL ★ PORTLAND, OREGON ★ ATWATER 3871

# GIANT RUFFLED *Spencer Sweet Peas!*



THIS glorious Sweet Pea Collection is famous among flower lovers throughout the West. Both home gardeners and commercial growers prefer these select strains of Giant Ruffled Spencers. Their long, sturdy stems and large, colorful blossoms delight the most severe critic.

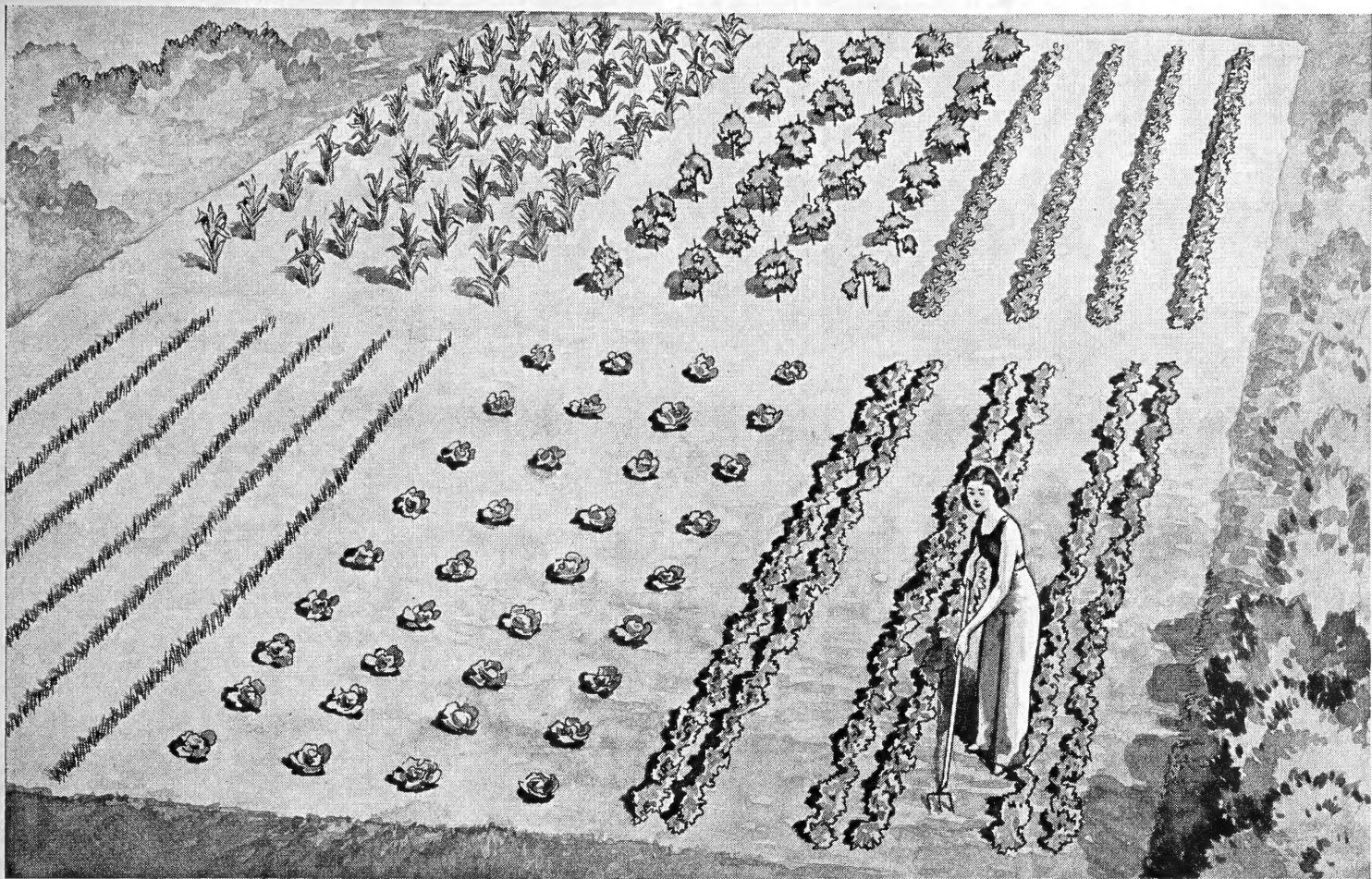
Packed in each large collection envelope are nine separate 10c packets . . . Each a different color . . . Ranging from pure White to the very brightest of Red, Orange and Lavender. Also, a deep Blue and striking Maroon. The soft shades of Pink, light Purple and Cream makes a marvelous contrast.

Inoculate your Sweet Pea seed with Hansen's Inoculator. This helps nature to produce a better root system, thus developing earlier blooms and requiring less water. Also makes fertilizer more effective. Packet 10c.

If you plant Sweet Peas this spring be sure to take advantage of this special Sweet Pea offer Nine 10c packets — a 90c value, all for 50c. The collection plants a row 40 feet long.

Sold by dealers everywhere.

**PORLAND SEED COMPANY**  
**DIAMOND QUALITY SEED**



# Victory Gardening ★ ★ ★

Spring of 1942 will long be remembered as the start of a great nation wide Victory Garden movement. People everywhere pitched in to do their bit. A great many were gardening for the first time and because of improper planning and the lack of knowledge, the results were rather disappointing. For those and other beginners, here are a few simple facts that should help make this year's Victory Garden a much greater success.

Proper planning of your vegetable garden should be started well in advance of the actual planting season, because of the present shortage of some varieties of seed, fertilizer and supplies, it is well to purchase your requirements early. However, buy only what you will actually need as an over-stock will be wasteful and may cause others to go without required supplies.

The vegetable garden should be as close to the kitchen door as is convenient,

and to make it as small as possible is a better aim than to make it as large as possible, with due regards of course to what is to be grown. There is often a temptation to lay out a larger area than the gardener can conveniently cultivate, but a small garden, well worked may be quite as productive as a larger one that is just beyond the gardener's limitation. Certainly it will be far more pleasing to the eye—an asset of vegetable gardening which is not to be neglected.

The first essential of a good garden is good soil. Very few localities have perfect soil for gardening but this is not necessary. However, a gardener that tries to have as near perfect soil as possible, produces the best crop. Decayed vegetable matter from last year's compost pile is an ideal form of humus for improving sandy or heavy clay soil. Be sure, though, the compost material is well rotted before using, otherwise this

material will rob your garden plants of much needed nitrogen and instead of improving soil, will actually prove a detriment until it becomes completely rotted.

If you haven't a compost pile, your local seedsman can supply you with peat-moss, an excellent material for improving soil condition. It holds from 15 to 30 times its own weight in moisture, and retains its identity for years instead of breaking down rapidly as leafmold does. During the slow break down, peat moss continues to build soil. Peat moss is not a fertilizer; nor is it a plant food, nothing comes out of it. Its job is to lighten the heavy clays and make them more porous, or to enable clay soil to hold more moisture. If you are going to need this material, use it in generous quantities as it will pay big dividends during the hot summer months in the saving of water and improving of plant growth.

*(Continued on page 2)*

# BLUE LAKE BEANS ARE THE FAVORITES IN OUR HOUSE!



Beans are America's favorite vegetable and Blue Lakes are rapidly becoming the "best selling" variety. This prolific variety was developed especially for Western gardens. It's the sort that delights the market gardener and makes the housewife smile.

Long, uniform bright green pods of excellent flavor and texture; produced on sturdy, up-standing vines. Very fine for canning and freezing.

For a succession crop plant every ten days or two weeks until the middle of July. From the time of planting until crop is ready to harvest is about 70 to 75 days.

Packet .... 10c  
1/2 pound .. 20c  
1 pound ... 35c

**DIAMOND  
QUALITY  
SEED**

**PORLAND  
SEED  
COMPANY**



## Victory Gardening ★ ★ ★

The next step to good soil is available plant food. Well rotted cow manure adds greatly to soil, but unless you are sure it is weed-free, you will be much better off to use a complete commercial fertilizer. Commercial fertilizers also have many other advantages over barnyard types as they contain not only the three essential elements for plant growth in sufficient quantity, but in addition many minor elements such as Iron, Calcium, Copper, etc. These minor elements are extremely important in producing healthful, vitamin rich vegetables. If minerals are not available in the soil, it is not possible for vegetables to store them within themselves. Prior to planting a garden, apply commercial fertilizer at the rate of 4 to 5 pounds per 100 square feet.

In laying out your garden, try to run the rows from east to west or as near this direction as possible. This will enable all the various crops to have an equal opportunity to secure full day sunshine which is so necessary in their growth. The taller types should be planted in the rows farthest north, so as not to shade the lower growing plants. You should also keep in mind the various growing seasons of the crop and plan to rotate seed planting until late summer, thus having fresh vegetables coming on throughout the entire season. For example, peas are an early crop and generally through producing late in July. They can be planted in the front rows closest to the south. When they are through producing a second planting of carrots or beets can go in their place, this enables the gardener to have a constant flow of fresh vegetables in a limited area which requires less time in cultivating and a smaller amount of water.

It is often desirable, and in many cases it is necessary to sow seeds under cover and later transfer the young plants to their place in the garden, thus an early start is given to seeds that require a longer period for maturity. Such crops as tomatoes, early cabbage, lettuce, celery and melons will do far better here in the Northwest if started in flats. For complete information on planting seeds in flats, see page 3.

During the growing season, a garden should be cultivated only enough to keep the weeds out. Over cultivation tends to dry out the natural moisture, thus requiring additional watering which will tend to lessen the natural flavor of vegetables. During dry weather, water your garden thoroughly once a week. It is better to soak the soil with a surface method such as irrigation, or the use of watering devices such as "Water-Wand". Overhead sprinkling can be used, but this method tends to cause mildew and diseases on certain types of vegetable tops and if done during the daytime, will cause sunburn and result in wilted vegetable tops.

With more soil going into cultivation, we can expect more insects. Unless these pests are properly controlled abundant crops cannot be had. A well kept garden should be sprayed or dusted every ten days during the early spring months. It is this period that pest infestation is the greatest and if well sprayed tender young plants are able to withstand the shock of this blitzkrieg. For your vegetable garden, it is best to use a non-poisonous type of material such as Rotenone or Pyrethrum or a combination of both.

The infestation of slugs is continuing to grow with great rapidity. These pests can mow down a complete young garden in one evening. They are especially fond of foliage of young tomato plants, carrots, beets and peas. Many people blame the seed for a poor crop when actually these night-eating pests are destroying the crop as fast as it comes up. For this control, start using Meta Slug Bait early in the spring as soon as the tender young plants are set out. You bait the garden with this amazing bait in the evening, and see the results of dead slugs the next morning.

It is real economy to buy good seed, fertilizer, insecticides and implements. Their costs are little more than inferior grades, and the results of a good, well kept garden will be well worth the difference. This year do your bit by properly planning and caring for a "Victory Garden", so that you and your family can enjoy a more healthy and happy life.

# Seed Sowing IN FLATS



1. Materials required are: flats; broken pieces of pots, gravel or other drainage material; sifter, with a bottom of  $\frac{1}{2}$ -inch wire mesh; compost (one part garden loam, one part peat moss and one part sand). Thoroughly mix the compost mixture and then place in flats over drainage material, pressing it firmly into the corners.

2. For a smooth surface, level with wooden block, leaving  $\frac{1}{4}$ -inch space between the soil and the top of the flat. To provide a very smooth surface for small seeds, such as primulas, petunias, etc., an extra surface sifting of compost through a fine screen is recommended.

3. Using a short ruler or a straight-edged stick and make shallow drills 2 inches apart. If the seed to be sown is coarse (zinnias, asters, etc.), the drills can be quite deep (approximately  $\frac{1}{4}$ -inch). Sow fine seed in very shallow drills ( $\frac{1}{8}$ -inch or less).



4. Write labels and place them at the head of the drills. Small sticks or green stakes can be used to separate drills containing different varieties. Mix small seed with a little fine sand before sowing —this gives better distribution of seed which helps greatly when transplanting later.

5. Cover the seed with the same compost to which extra sand has been added. Some prefer to use sand only. A good rule to follow is to cover to the depth of the seed itself. Extra fine seed should not be covered; merely press it gently into the soil with a flat, level piece of wood.

6. Thoroughly water the planted flat with a very fine overhead spray, being careful not to wash the soil or disturb the seed. Place it in a greenhouse or a warm spot not reached by direct sunlight. Cover with a glass (or Suntex cloth) and a double thickness of newspaper. Turn the glass each day to ventilate and remove excess moisture. Never let soil dry out during growing period.

# VEGETABLE *Nutrition Chart*

Essential Vitamins and Minerals in properly grown Vegetables. Vitamin count based on International Units except G (Riboflavin), given in Sherman-Bourquin Units. Minerals shown in their relative strengths.

VEGETABLE OR FRUIT	Amount Units Based on	Vitamin A	Vitamin B <sub>1</sub>	Vitamin C	Vitamin G (B2)	Calcium	Phosphorous	Iron	Manganese	Copper
ARTICHOKE	1 medium size	450		80		XX	XX		XXX	
ASPARAGUS, Green	6 to 7 stalks	430	100	350						XXX
BEANS, Dry	½ cup, baked	70	50				XXX	XX	XX	XX
BEANS, Green	½ cup, incl. liquid	450	45	80		XX	XXX	XX	XXX	
BEETS, Root	½ cup, cooked	35		100	50				XXX	
BEETS, Tops	½ cup, cooked	12,000		320	250		XX	XXX	XX	XXX
BROCCOLI	½ cup, cooked	8,000		440	220	XXX	XXX	XXX		
BRUSSEL SPROUTS	½ cup, cooked	250		900			XX	XX		
CABBAGE, Green Raw	½ cup, shredded	550	30	600	40	XX		XX		
CABBAGE, Cooked	½ cup	775		750		XX		XX		
CARROTS	½ cup, cooked	3,200	10	35	40	XX				
CARROTS, Raw	1 large, 3½ oz.	3,850	12	70	50	XX				
CAULIFLOWER	½ cup, cooked	50	30	600	60	XXX				XXX
CELERY, Green	2 average stalks	300		30		XXX	XX			
CHARD, Swiss	½ cup, cooked	12,000		320	250	XXX		XXX		
DANDELION, Greens	½ cup, cooked	18,000		700	75	XX		XX		
ENDIVE, Green	½ cup, shredded	1,500		350	50	XX		XX		
KALE	½ cup, cooked	20,000	12	720	200	XXX	XXX	XXX		
KOHL-RABI	½ cup, cooked		12	600		XX	XX			
LETTUCE	3 large leaves	1,500	15	125	30	XX		XX		XXX
MUSTARD Greens	½ cup, cooked	12,000		200	210	XXX		XXX		
PARSLEY	1 tblspn, chopped	900		50		XX		XX		
PEAS, Green	½ cup, cooked	800	100	150	100		X	XX		
PEPPERS, Green	1 medium size	600		2,000		X	XX			
POTATOE, White	1 medium size	80	50	400	40					
POTATOE, Sweet	1 med. in jacket	5,200	30	250	50					
SPINACH	½ cup, cooked	17,000	25	450	100	XX		XXX	XXX	
SQUASH, Yellow	4 oz., cooked	2,200	17	90						
TOMATOE (Raw)	1 medium size	1,200	10	2,000	30					
TOMATOE	½ cup, cooked	1,050	35	300		XX	X			
TURNIP, Root	1 medium size		40	360	20	XX				XX
TURNIP, Greens	½ cup, cooked	7,000	12	350	260	XXX		XXX	XX	
WATER CRESS		12,000	20	350	100	XXX		XXX		XXX

Data gathered from Better Homes and Gardens Magazine and Seed World Magazine.



The new knowledge of nutrition—new scientific facts about the human diet and its effects on the health of people—has injected an entirely new angle into gardening. Having a family garden is no longer a mere matter of planting so many rows of onions, so many rows of peas, of cabbage, and of kohlrabi. Providing the family with a proper diet has become a science. To be well fed and benefit from a protective diet, we need to grow a wide variety of vegetables so we shall have a proper balance of the protective vitamins and minerals derived from vegetables the year round.

For several years now, we have all heard about the importance of Vitamins and how vital they are to health. Most of us think of vitamins as something rather mysterious and available in little pills. Actually they are found in great quantities in our daily food and with the proper planning of meals it is an easy matter to secure the minimum requirements daily without the additional cost of pills.

#### GROW YOUR OWN

The importance of growing your own vegetables is two fold. First, garden fresh vegetables are far more palatable because of their crisp tenderness and sweet flavor. Varieties grown commercially must have a tough coarse texture to withstand packing, shipping and handling in stores.

This durability always sacrifices some delicacy and taste found in home grown varieties. Second, vegetables will deteriorate in vitamin content if allowed to stand for some time before serving. Garden fresh vegetables, eaten the same day they are harvested, contain their full share of vitamins and minerals.

#### MINERALS IMPORTANT

Much has been said about vitamins and their importance to our health. Little stress has been laid to the importance of minerals, whereas minerals are just as necessary in a well balanced diet as the vitamins. Strange as it may seem, vegetables known for their high mineral content (such as iron in spinach) can be completely lacking in minerals if the soil in which they grow does not contain minerals. This shows the importance of fertilizing with a complete plant food so you can be certain your vegetables will be rich in minerals.

**Vitamin A:** Especially important for proper functioning and development of the eyes. It is your bodyguard against infection and necessary for body growth. Scientists say it's important for a long, healthy life. Extra vitamin A is stored within your liver, it is easy to get in yellow and leafy vegetables, butter and eggs.

**Vitamin B1 (Thiamine):** Essential for the functioning of the heart and nerves. Whets the appetite and gives you vim and vigor. Important in body growth. Get your B1 every day in whole grain cereals, fortified bread and several vegetables.

**Vitamin C:** Helps keep your teeth and gums healthy, and your body agile and young. Speeds healing of wounds. Found in nearly all vegetables but is rather temperamental and apt to be destroyed by cooking. Get 'em raw in fresh vegetable salads. Tomatoes are one of the best sources known for this vitamin.

**Vitamin G:** (Riboflavin) : Like "A" it is needed for good eye sight also gives you vigor. Important to body growth. Not readily stored, should be supplied daily from green, leafy vegetables, meat and milk.

#### COOKING VEGETABLES TO SAVE VITAMINS

**Baking** is the best method to preserve Vitamins and minerals. Dry baking in their skins generally used for potatoes, sweet potatoes, squash, turnips, carrots, onions, and parsnips is a simple method whereby they are baked in a hot oven until tender when pierced with a sharp fork. Baking, however, also includes the roasting of whole vegetables with meat, gravy, or fat, especially when potatoes or sweet potatoes are scraped, preserving minerals under the skin.

**Au Gratin and Scalloping** are other forms of baking, especially when fresh vegetables are used with cheese or crumbs. Left-over cooked vegetables may be prepared by these methods also, but the Vitamin and mineral value will be determined by the first cooking.

**Waterless Cooking** of fresh vegetables is any process in which no water is added. The water in the vegetable itself does the cooking. A thick-walled kettle with a tight-fitting lid is the necessary equipment. Very low heat is used, and the vegetable is tender in a very short time because neither heat nor steam escapes. No minerals are lost and the loss of Vitamins is almost as low as in baking.

**Steaming** is cooking in live steam and valuable for the vegetables that can stand a high temperature for a long period; carrots, beets, parsnips, sweet potatoes, wax beans, or those that are cooked in the meat pot so that the extracted minerals and Vitamins are used in the gravy.

**Boiling** does the most damage to vegetables, yet it is used most frequently by the largest number of home-makers. Although there are methods that reduce the losses to a minimum, the modern woman should remember that boiling is to be

# TAKE THE OFFENSIVE AGAINST SLUGS



Night feeding Slugs are becoming more of a menace to Western gardeners each year. These pests can be easily cleaned up by using the amazing new META which both attracts and destroys the pests right on the spot.

Many gardeners do not realize that these pests are robbing their garden and killing young plants. Snails and Slugs are night feeders and never in sight during the day. An application of META will no doubt surprise you. Buy a package today and bait your garden this evening. Tomorrow morning, around each pile you'll see the results—no guess work about META.

META does not contain poisons such as Calcium Arsenate. It is a straight "Metaldehyde" bait, designed especially to kill slugs and snails.

Large 1 pound package  
25c

Giant 3 pound package  
50c

used least often, and always to be overbalanced by the better methods. Most of the mineral salts occurring in vegetables are easily dissolved in water and the loss of Vitamins during boiling takes place in several ways. They may be destroyed by overheating, by prolonged exposure to the air, and by dissolving out in the cooking water. When this is drained off and discarded, the principal food values gained by the intelligent use of vegetables have been thrown away. In every case only the smallest possible amount of water should be used and it should be boiled rapidly when the vegetables are dropped in. Then the heat reduced when the vegetables are at boiling temperature. They should be cooked only just tender.

**To Boil Vegetables Properly**, methods must be selected according to the color:

1. The green vegetables are best cooked in an uncovered kettle in water that is slightly alkaline to retain the color. Cook only until tender. If overcooked, green vegetables turn brownish because of chemical changes in the coloring matter, the fine flavor is ruined, while food values are lost.

2. White fresh vegetables such as cabbage, cauliflower and onions are strong-flavored, due to their special oils. Hard water changes these oils so that the white color turns to yellow or brown. To prevent this, add 1 teaspoon of lemon juice or white vinegar. Drop the vegetable into enough rapidly boiling water to cover and cook with the kettle uncovered until just tender to the fork. Add the drained water, if any, to your soup.

3. The red color in vegetables is produced by acid and needs to be kept that way. Tomatoes usually have enough acid of their own to keep the color, but beets and red cabbage need a teaspoon of lemon juice or white vinegar. Cook in a small amount of water in a covered kettle.

4. Yellow vegetables are among the most valuable and stable. That rich yellow color is not only beauty but actually the foundation of Vitamin A. Not much damage can be done to it although the minerals and other Vitamins can still be destroyed if the vegetable is carelessly handled. Cook covered in a minimum of water. Vegetables may be prepared by other methods such as broiling, sauteing, panning, or combinations of methods according to the family's desires. The amount of Vitamins and minerals retained depends on which method is most prominent.

The appreciation of vegetables as food has greatly increased in recent years, with an extended understanding of their peculiar values. The modern woman knows that vegetables provide not only starches and sugars for energy, as well as several forms of protein, but what is most important they provide impressive amounts of Vitamins A, B, C, E, and G, in addition to mineral salts. These mineral salts are especially Calcium, Phosphorus, Iron, Copper, Manganese, as well as Iodine, in vegetables grown along the seashore. Besides all this she knows that the generous use of many vegetables helps to keep up the body's normal alkaline balance, which contributes so largely to health and vitality.

## VITAMIN REQUIREMENTS PER DAY (IN INTERNATIONAL UNITS)

VITAMINS	INFANTS AND CHILDREN	ADULTS
A	2,000-3,000	3,000-6,000
B	50-100	200-400
C	100-200	300-450
G	(Data Lacking)	600

# VEGETABLES



KENTUCKY WONDER GREENPOD

**ARTICHOKEs.** Sow early in March and transplant when warm, in rows 4 feet apart in the rows. Cut the tops off in winter and protect with a heavy covering of straw, leaves or peat moss. The first season will yield only a partial crop. The second year, thin the shoots to three of the best, and these will begin to form heads early in summer. **Giant Green Globe.**

Packet, 10c; Ounce, 75c.

**ASPARAGUS** may be grown in almost any soil, but succeeds best in rich, sandy friable loam with good under drainage. Avoid planting near trees or tall shrubs because of the shade and heavy draft on the fertility of the ground. **Giant Washington; Mary Washington.**

Packet, 10c; Ounce, 20c

**BEANS.** This vegetable is classified into two groups the dwarf or bush variety and the pole or climbing type. These two groups are again divided into two distinct types, the green podded varieties and the wax or yellow podded varieties.

Nearly all of the Bush varieties are ten to twelve days earlier than the Pole types which make them a favorite among the home and market gardeners. Also it is not necessary to stake this type because of their low growing habits.

Beans will not stand frost and should not be planted until two weeks after the last killing frost. It takes approximately 1 pound of seed for a row 100 feet long and should be planted in hills approximately three or four seed to the hill. For the most tender and delicious beans they should be picked when about two-thirds grown.

For a succession of crops, plant every ten days or two weeks until about the first of August. Seed sown after this time will probably be caught by early frosts. Bush varieties mature from forty-five to seventy days depending on the heat. Pole varieties, seventy-five to eighty days.

Cultivate frequently but never do this in the early morning or just after a rain as bean foliage is very susceptible to disease which is easily spread when the vines contain an over abundance of moisture. **Packet, 10c; 1/2 pound, 20c; 1 pound, 35c.**

## GREENPOD POLE VARIETIES

**Oregon Giant Greenpod.** Keeps producing until killed by frost. Large fleshy pods 10 to 12 inches in length, stringless, light greenish yellow splashed with red.

**Packet, 10c; 1/2 pound, 30c; 1 pound, 50c.**

**Kentucky Wonder Greenpod.** Pods are very fleshy, saddle back, fine grained and stringless. Exceedingly early and prolific. Average 8 to 10 inches in length and are light green. **Pkt., 10c; 1/2 lb., 20c; 1 pound, 35c.**

**Blue Lake.** The popularity of this variety is rapidly increasing here in the Northwest. Its growing habits are well adapted to our soil and climatic conditions. This variety produces bountifully and are being used greatly by canners.

## WAX POD POLE VARIETY

**Kentucky Wonder Wax,** the earliest of all wax varieties. This pole bean starts bearing when scarcely higher than a bush bean and continues until frost. The pods are fleshy, long, crumpled and of creamy yellow color.

## GREENPOD BUSH VARIETIES

**Burpee Stringless Greenpod.** By far the best of the bush varieties, exceedingly early and a very heavy producer. Pods five to six inches long, round and exceedingly fleshy, absolutely stringless and tastiest of all beans.

**Stringless Black Valentine.** The pods are very fleshy, round and saddle back. Produces a large crop of tender beans.

Other varieties—**Dwarf Horticultural or Cranberry, Stringless Refugee, Tender Green and Little Navy.**

## WAX POD BUSH VARIETIES

**Improved Golden Wax.** Vigorous and highly productive, this bean reaches table condition in fifty days. Pods are a deep golden yellow about five inches in length.

**Davis Wax.** The pods are long, rust resistant and very tender. The dry white kidney-shaped beans are excellent for baking.

Other varieties—**Pencil Pod Black Wax, and Prolific Black Wax.**

## LIMA BEANS

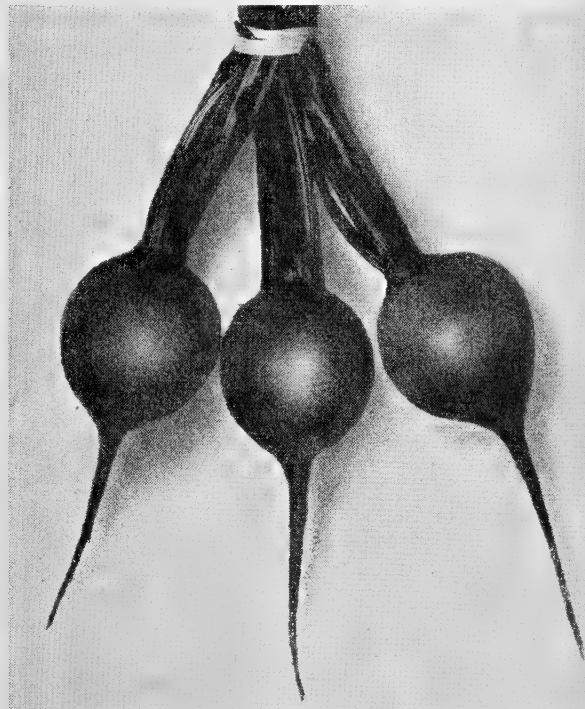
Pkt., 10c; 1/2 lb., 30c; 1 lb., 50c

**Oregon Pole Lima.** Proven over many years to be well adapted to our cool northwest climate. Strong, vigorous grower, bearing continuously until frost, pods best when turning yellow.

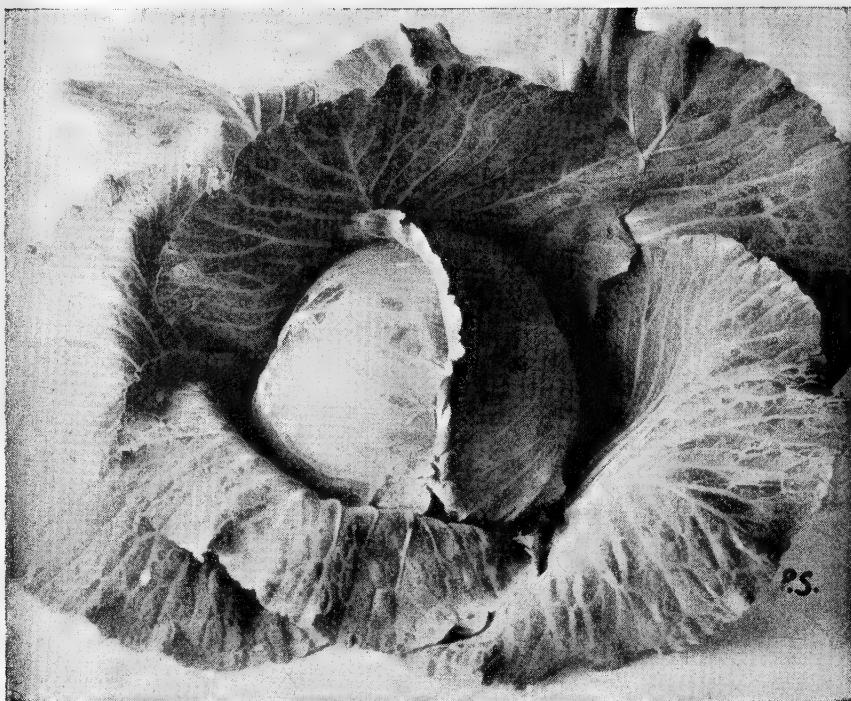
Other varieties: **Burpee Bush Lima, Henderson Bush Lima.**

**BEETS.** This is one of the easiest vegetables to grow. They do exceedingly well in almost any kind of garden soil but prefer a rich sandy loam that is easily worked. They are exceedingly rich feeders, so the soil must be well fertilized in order to get the quickest growth necessary for tender juicy beets. Slow growth means tough roots.

It is always a good idea to sow beet seed thickly and then thin out plants to allow proper root development. When plants are about four inches high thin to two inches apart if you want many small roots and to five and one-half inches if you desire fewer but larger beets.



DETROIT DARK RED BEETS



DANISH BALL HEAD CABBAGE

### BEETS (*Continued*)

Make the rows 12 inches apart if you cultivate with a hoe or wheel hoe. Cultivate deeply and often at first but carefully so the young seedlings will not be disturbed.

**Packet, 5c; ½ ounce, 15c; ounce, 25c.**

**P. S. C. Market Gardener.** Extra early and remarkable for its fine quality and rapid growth. The tops are small, the roots are deep red, globe shaped and the flesh is of dark red variety. It is preferred by market gardeners because it matures evenly, stands long and does not split.

**Detroit Dark Red.** Due to its uniformity in size and smooth, handsome appearance it is a very popular variety with commercial growers as well as home gardeners. Roots are deep red, globe shaped with small tap root. This variety is entirely free of white rings and retains its tasty flavor after it grows to full size. Excellent for pickling.

**Early Blood Turnip Beet.** An improved variety over the blood turnip type. Tops are large, roots dark red and nearly round. Flesh deep red with lighter zoning, sweet, crisp and tender. These beets are recommended for summer and fall use.

**Extra Early Egyptian.** One of the best for forcing. Tops are small, the roots are dark red and flat on the bottom with a very small tap root.

Other varieties—**Crosby Egyptian** and **Early Wonder**.

**MANGEL WURZEL.** Seed should be sown at the rate of 5 to 6 pounds per acre and thinned to 10 inches apart in rows.

Mangels should be planted early in the spring in rows 2½ feet apart, the seed should be 1 inch apart in the rows and covered by 1½

inches of soil firmly pressed down. When plants are 3 inches high begin to thin until roots are 10 inches apart. One ounce of seed plants approximately 100 feet and 5 pounds to the acre. **Packet, 5c; ounce, 25c; ¼ pound, 75c.**

**P. S. C. Heavy Cropper.** One of the largest Yellow Mangels easily pulled as it grows two-thirds above the ground. We highly recommend this variety because of its outstanding quality.

**Half Sugar Mangels** double the yield of sugar beets. Roots large, smooth, creamy white with few rootlets tops medium size.

**Danish Sludstrup.** Roots long, reddish yellow, good yielder growing well above the ground.

**BRUSSELS SPROUTS.** Primarily a fall and winter vegetable. The plant will not mature properly in intense heat and dryness. It is closely related to the cabbage and seed planting should be treated exactly as that of the late cabbage varieties.

When the plants reach a growth of 5 to 7 inches high pinch off a few of the leaves and set out about 18 inches apart in rows that are 2 feet apart.

Cultivate frequently especially after rain. Sprouts begin forming in the leaf bases of the lower leaves first. To stimulate their production it is a good plan to break off most of the lower leaves of the plants beginning about October 1st or when the buds develop. This also forces more food into the forming sprouts, the lowest of which should be picked first.

**Packet, 10c; ounce, 75c.**

**CABBAGE.** This vegetable will not stand extreme heat or dryness and will grow well only where there is adequate moisture and cool weather. Most good garden soil will produce satisfactory cabbage if it is properly enriched. Commercially it is grown on soil ranging from sandy loam to very hard clay or even mulch. Perhaps what is more important than texture

is soil moisture. This must be adequate and conserved by constant cultivation. Most important of all is fertility, no crop repays so richly the expenditure of fertilizer as cabbage. It is most advisable to use a commercial fertilizer that could be applied before planting at the rate of 11 pounds to a 100 foot row. It is also advisable to top dress about three weeks after the plants are set out with Nitrate of Soda at the rate of 1½ pounds to 100 foot row. The Nitrate of Soda application is necessarily only for the early varieties.

Sow seed in flats during February and March, use normal soil as richly fertilized types will cause the seedlings to grow too fast and become spindly. When seedlings are 3 to 4 inches high replant further apart in flats or boxes. This insures stocky instead of spindly plants and makes them a month or six weeks earlier than if the plants were set out. Cabbage should be set out at different intervals depending upon variety. Early varieties should be set about 14 inches apart in rows 28 inches apart. Late season varieties should be set 24 inches apart in rows 36 inches apart. If planted much closer they would be crowding and result in small heads. Prices unless otherwise noted.

**Packet, 10c; ½ ounce, 30c; ounce, 50c.**

### EARLY VARIETIES

**Early Jersey Wakefield.** Small compact, conical heads. Plants small, short stemmed.

**Copenhagen Market.** Heads small, round, and solid. Plants compact with short stems.

**Golden Acre.** Earlier than Copenhagen Market. Heads are small, round and solid.

### LATE VARIETIES

**Danish Ballhead.** Most widely used type of late cabbage. Heads deep, round with hard compact interior, stubby with short stems.

**Late Flat Dutch.** Large, flat, solid heads 6½ to 7 inches deep.

Other varieties: **Danish Roundhead, Red Rock, Late Savoy, Wong Bok and Chinese Petsai, Early Flat Dutch.**

**ITALIAN BROCCOLI.** A branching herb about 2 feet high. In summer all of the lateral branches and the circle ones end in a small green open head. This, which should be cut before it actually flowers, is cooked like cauliflower or spinach and is very delicious and rich in vitamins.

The plant prefers coolness and moisture. Unless you are in a particularly favorable place, such as the sea coast, Italian Broccoli is best treated as a two-season crop. First it is started in a hotbed or greenhouse in February or March and transplanted to the open after frost. The second crop is sown in the seed bed in June or July and transplanted to the garden a month or six weeks later. The later crop can be harvested throughout the Autumn months.

Plants should be set two feet apart in rows which are themselves two feet apart. A single row of 50 plants is ample for a family of five. The soil should be well cultivated.

**Packet, 10c; ½ ounce 65c.**

**St. Valentine Broccoli.** This variety is very similar to cauliflower, it must be planted with the same cultural directions.

**Packet, 10c; ½ ounce, 65c.**

**CARROTS.** Sow seed rather thickly in drills about  $\frac{1}{2}$  to  $\frac{3}{4}$  on an inch deep, the rows being 12 to 24 inches apart depending on hand or machine cultivation. After the plants are up about 5 inches they should be thinned out from 3 to 4 inches apart in the rows. If the soil is rich there will be no trouble about root development. Young, tender, quick growing carrots are better flavored than the old or slow growing type. If the soil is not rich apply a complete commercial fertilizer at the rate of 6 pounds per 100 foot row. It takes about 1 ounce for a row of this length.

In order to have tender, juicy carrots all season long it is advisable to make small sowings at regular two-week intervals up to the middle of July. Later sowings may not mature before early frost.

Carrots like all root crops should be protected against soil insects such as maggots, worms and wire worms. The best control is crude Naphthalene Flakes worked in the soil a few days before planting the seed.

**Packet, 5c;  $\frac{1}{2}$  ounce, 25c; ounce, 45c.**

**Imperator.** An outstanding type bred for market garden use and for shipping. Tops are medium, but strong enough for good bunching. Roots 7 $\frac{1}{2}$  to 8 inches long with sloping shoulders, smooth, deep rich, orange, uniformly tapered to blunt end. Flesh rich orange, color extending to the center of the root with distinct core.

**P. S. C. New Coreless.** Larger than all other varieties. Crisp, solid, and uniform in size. Truly the outstanding carrot for tasty, crisp vegetable salads during the hot summer months. A genuine stump-rooted type.

**Danvers Half Long.** Grown mainly for its productiveness and adaptability to all classes of soil. A fine quality carrot of uniform size and shape. Sweet, crisp, tasty and tender deep orange flesh.

**Chantenay (Half Long).** Well adapted for home gardens. Requires little cultivation and care. Ideal for lazy gardeners. Medium size tops, small necks, slightly tapering roots, stump-rooted and smooth.

Other Varieties: **Improved Long Orange, Oxheart.**

#### STOCK CARROTS

**P. S. C. Yellow Giant.** Especially adapted to wet, heavy soils. Half long roots, broad shoulder, growing half out of the ground. Bright yellow flesh. Producing a heavy crop that is most excellent for dairy cows.

**Large White Belgian.** One of the oldest and best known stock carrots. Roots 12 inches in length, producing a heavy yield of marvelous quality.

**Mastodon.** Improved short white flesh, with smooth roots. Very heavy at shoulders, tapering.

**CAULIFLOWER.** Cauliflower is more difficult to grow than any other plant of the cabbage tribe, like most of them it will not stand heat

and drought which limits its culture to areas free of these conditions. It is best grown in fairly cool climates where there is plenty of moisture. It will not, however, stand as much frost as cabbage or Brussels Sprouts and in very protracted warm weather it will not head. Like other members of the Cabbage family Cauliflower is divided into two groups, early varieties and the late varieties.

Soil and fertilizer conditions are the same as cabbage. It is advisable to use a good commercial fertilizer and to cultivate at regular intervals.

For quicker and better results it is advisable to start cauliflower in flats and later transplant when the young plants are about 4 or 5 inches tall. The plants should be set about 2 feet apart in rows 3 feet apart. This will allow approximately 50 head of Cauliflower to a 100 foot row. This should be more than ample for a family of five.

Solid white heads may be produced by tying the outer leaves over the center of the plant as soon as the first button-like swelling appears. Use string, tape or raffia for tying. Do not pull tight enough to injure outer leaves.

**Packet, 10c;  $\frac{1}{4}$  ounce, 75c.**

**Portland Seed Co.'s Mt. Hood Snowball.** One of the best early varieties that we highly recommend for early and late planting. Its pure white, fine quality heads of medium uniform size are exceedingly tasty. Popular with home gardeners as well as market gardeners.

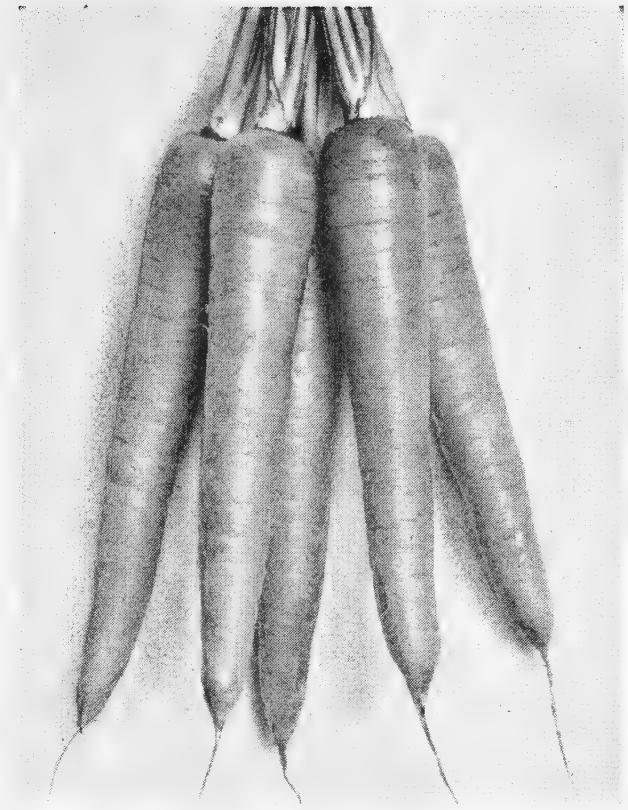
**Danish Giant.** Outstanding because of its ability to yield heavily in dry weather. Its large, solid white heads mature very early if forced indoors during early growth.

**Early Snowball.** Adapted very well to forcing as well as outdoor planting. Plants are compact, producing medium to large, round heads that are pure white when blanched.

**CELERY.** Successful celery culture is based on the right climate and the right soil. As to the first the plant requires coolness as well as sufficient moisture.

No garden crop grown is such a rich feeder as celery. The soil must have depth and mellowness and an abundant supply of moisture. It is impossible to grow celery in hard or sun-baked soil. It is advisable to prepare the seed bed with a good commercial fertilizer and peat moss using about 6 pounds per 100 foot row. This should all be done about three weeks before the plants are set in the garden.

In growing celery from seed it is advisable to start the seed in flats and later transplant when the small plants are approximately 5 inches tall. **Packet, 10c;  $\frac{1}{2}$  ounce, 40c.**



IMPERATOR CARROT

**Golden Self Branching.** Indeed, one of the best early spring varieties for Northwest gardens. The long, crisp stalks mature to a beautiful golden yellow, which are easily blanched to a creamy white.

**Golden Plume.** Superior quality, vigorous growing. A favorite with home gardeners. Semi-dwarf in habit. Fine flavored stalks that are brittle, stringless and blanch quickly.

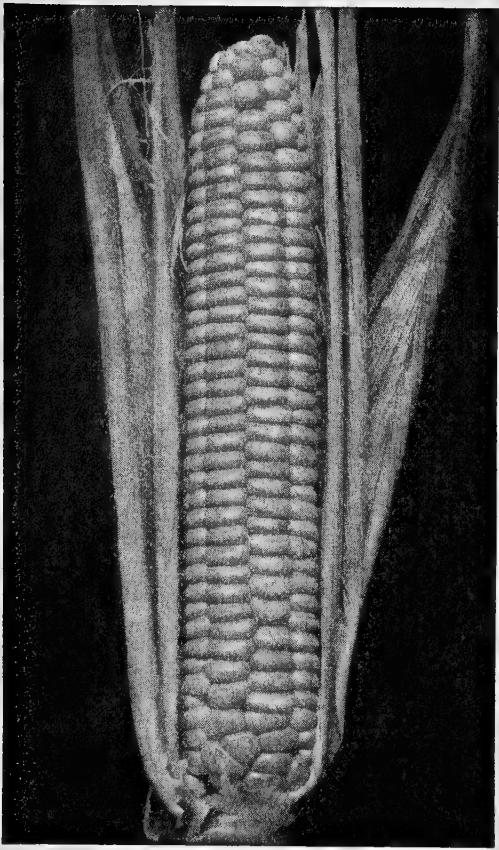
**Utah or Green Crisp Celery.** Matures a week or ten days earlier than most other types of celery. Plants are sturdy, compact, and solid. Stems are broad, thick and rounded.

**CHICORY. Witloof.** This variety has become exceedingly popular for winter salads. It forms a delicious dish when served like Endive or Cos lettuce with French dressing. The leaves and stems blanch easily. Seed should be sown one inch deep during May or June and spaced about 18 inches apart.

**Large Rooted.** The roots of this plant are very popular as a coffee substitute. The young tender leaves may be used for salad or cooked for greens. Sow quite thinly in shallow drills in the spring. When well started, thin to stand 2 to 3 inches apart in the row. **Packet, 10c.**

**CRESS. Curled or Pepper Cress.** Its leaves have a very pleasant pungency, which gives it the common name "Pepper Grass." The spicy foliage is frilled or curled, making it very attractive for salad trimmings. Sow thickly in drills. **Packet, 5c; ounce, 15c.**

META KILLS SLUGS AND SNAILS



GOLDEN BANTAM CORN

**CHIVES.** The famous Schnittlauch—highly prized for flavor. The seed is not easily germinated and it will be necessary, therefore, to plant a fairly good quantity of the seed if many plants are desired.

Packet, 10c;  $\frac{1}{2}$  ounce, 60c.

**SWISS CHARD.** Only the tops of this beet are used, like spinach, and the succulent stalks and midribs may be prepared in the same way as asparagus. The plants are cultivated like beets except that they should be thinned to 8 to 10 inches apart. If only the outer leaves are gathered, the inner leaves will continue to grow, and repeated pickings can be made.

**Lucullus, Dark Green.** The fleshy crumpled leaves of this variety make very choice greens. Plant grows erect, the stalks are rounded and finely ribbed; the foliage is a rich deep green. Favored by many because of its superior flavor.

Packet, 5c;  $\frac{1}{2}$  ounce, 15c; ounce, 25c.

**CELERIAC.** The same culture as celery. See page 9.

**Large Smooth Prague.** The latest improved form with very few side roots. This is the largest and best variety of the "Turnip Rooted Celery." Packet, 10c.

#### ORTHO EARWORMICIDE

Controls Corn Earworms in sweet corn.

4-oz. treats	120 ears
1 pint treats	480 ears

**CORN.** Corn is truly a native of this country, developed before the new world was discovered. It can be raised with some success in every state in the union, however, for best results it requires a growing season of seventy to eighty days and with plenty of summer heat.

Any good garden soil will grow corn but it will mature quicker and be more tender if a good commercial fertilizer is used at the rate of about 11 pounds to a 100 foot row.

Generally speaking, it is better to plant the early varieties in drills and the later varieties, of course, in hills, so spaced that cultivation may be done both ways without disturbing the plants. If your garden is of the weedy sort it is better to plant all varieties in hills because it is thus possible to control weeds easier when plants are in long rows.

For early types make the drills 2 to  $2\frac{1}{2}$  feet apart and  $1\frac{1}{2}$  inches deep. For growing in rows put a seed every 3 inches in a drill with the expectation of thinning to 6-inch intervals as soon as possible. The thinned plants cannot be transplanted with any success.

Packet, 10c;  $\frac{1}{2}$  pound, 20c; 1 pound, 35c.

#### YELLOW VARIETY

**Golden Bantam.** This variety of corn is second to none for tender, sweet and juicy ears. Although not as early as some types, its exceptionally fine quality makes it well worth waiting for. Stalks about 5 feet tall. Eight straight rows of kernels to the cob.

**Improved Golden Bantam.** An improved strain over the old type Golden Bantam, however, we still recommend the old fashioned variety for Northwest conditions. This newer strain has ten rows of kernels to the cob.

**Golden West.** A very fine early variety. Much the same flavor and tenderness as Golden Bantam and exceedingly popular with market gardeners. Ten to twelve rows to the cob.

**Early Sunshine.** One of the early varieties of sweet corn. Matures 3 or 4 days earlier than the majority of others. Taller and more vigorous with 12 rows to the ear.

Other varieties: **Golden Giant, Golden Evergreen, Golden Cross Bantam.**

#### WHITE VARIETY

**Stowell's Evergreen.** Remarkable for remaining in a fresh condition for a long period. Plants 7 to  $7\frac{1}{2}$  feet tall. Ears 8 inches long,  $2\frac{1}{4}$  to  $2\frac{1}{2}$  inches thick; 14 to 20 rows to the cob. The most popular white variety of sweet corn.

**Oregon Evergreen.** Earlier than Stowell's and just as fine and sweet. An exceptionally fine canning variety because of its uniform medium to large ears with 12 to 18 rows. Other varieties: **Early Portland Market, Country Gentleman, Black Mexican, Early Evergreen, Early Minnesota, Howling Mob, Peep o'Day.**

#### FIELD CORN

We offer the following varieties: **Minnesota "13", Oregon Yellow Dent, Pride of the North, Northwestern Dent, Champion White Pearl, White Flint, Wisconsin White Dent and King Phillips.** We will gladly quote prices on inquiry.

**CUCUMBERS. All Cucumbers—Packet, 5c; ounce, 25c.**

Gardeners with limited space cannot afford to plant cucumbers, which for outdoor culture must be planted in hills at intervals of at least  $4\frac{1}{2}$  feet each way. The plant is a sprawling tendrill-bearing vine. It requires considerable heat, a lot of moisture and a rich soil. Cucumbers are much more sensitive to frost than most vegetable crops. They can only be grown in regions that not only have plenty of heat but a frost-free period of 75 to 90 days.

Warm sandy loam especially if it has a gentle slope southward is the best soil for outdoor cucumbers. No other method of fertilizing is so satisfactory as putting 2 quarts of thoroughly rotted manure under each hill or a scant wheelbarrow load is better. Broadcasting manure or fertilizer for plants spaced so far apart is merely wasteful.

See that the manure is covered sufficiently so that no seed touches it. This is easily accomplished by forming a circular hill about a foot wide and 4 inches deep over each lot of buried manure, the site of which had better be marked with a stick, if some days intervene between burying and planting time.

Planting cannot be done until warm or hot weather is assured. Plant six seeds to each hill expecting to reduce them to three as soon as germination is complete, selecting the three best plants. The seed should be planted about  $1\frac{1}{2}$  inches deep.

As the vines become large they will fill all of the space between the hills, so it is very important that you cultivate thoroughly while the plants are still young.

**Diamond Long Green.** Truly the outstanding of the large varieties. It is extremely crisp and tender, sweet, very fine for slicing. It is best for sweet pickles when matured.

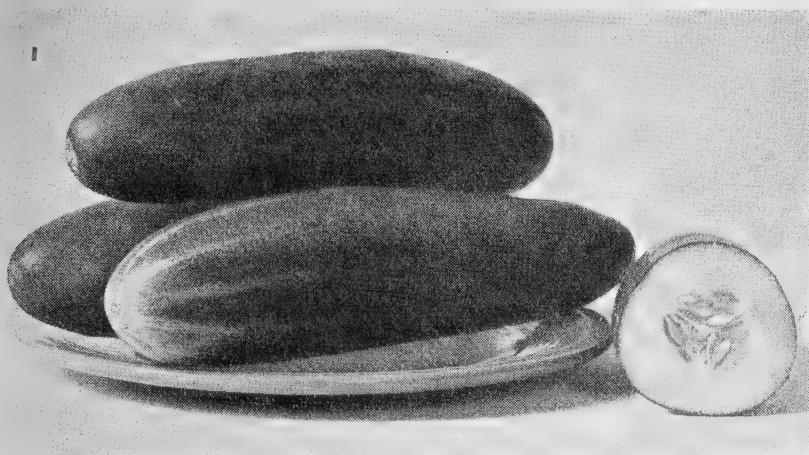
**Improved White Spine.** An outstanding variety for table use. It is one of the early types and exceedingly tasty. Uniformly straight and handsome light green fruits, with a few white spines.

**Boston Pickling or Green Prolific.** Truly the finest and most popular pickling variety. The tasty, bright green fruits range from 4 to 5 inches in length and are exceedingly productive. Fine for home and market.

**Davis Perfect.** A vigorous grower. Fruits long, dark green, crisp and tender. Holds its color exceedingly well after picking, which makes it a favorite with the market gardeners. Seed cavity is small, making them very desirable for home and market uses. One of the outstanding varieties for Northwest climate.

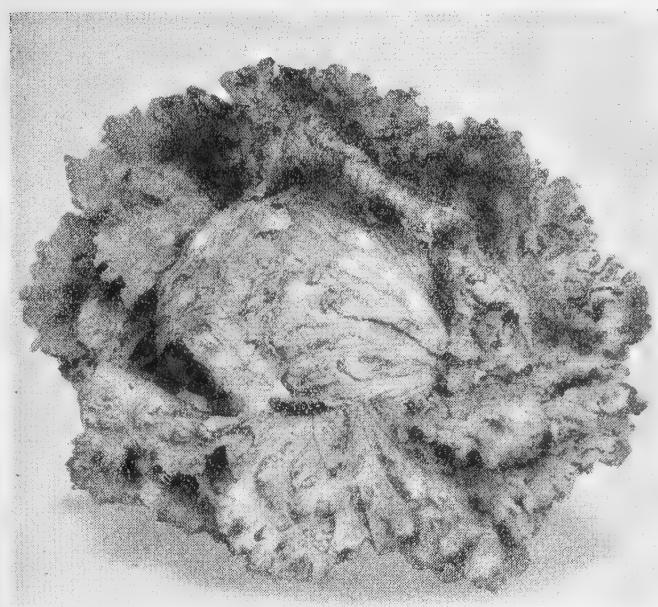
**Colorado.** Cucumber Colorado won the All American 1935 Award of Merit and is destined to become one of the most popular varieties. One of its outstanding qualities is that it does not taper but is practically the same size from end to end. The fruits are dark green, 9 to 12 inches long and will yield more slicing cucumbers than any other variety of approximately its size. Is highly recommended for the shipper and market garden.

Other Varieties — **Short Green or Early Frame, Lemon, Japanese Climbing, Small Gherkin, Deltus, Vaughn, Straight Eight.**



COLORADO CUCUMBER

NEW YORK HEAD LETTUCE →



**ENDIVE. Broad Leaved; Green Curled.** Culture similar to lettuce. Outer leaves should be tied over the head to bleach.

Packet, 5c; ounce, 30c.

**EGG PLANT. Black Beauty.** Extra early, quick growing, vigorous variety, uniform size. Color deep, blackish purple. Excellent for market. Packet, 10c; ounce, 65c.

**New York Improved Large Purple.** Leading market variety. Not quite as early as Black Beauty. Large and productive.

Packet, 10c; ounce, 65c.

**KALE or BORECOLE.** This plant is widely grown for greens. Most varieties have heavy, densely curled foliage of tasty greens, and the dwarf variety is desirable for ornamental garden use. The culture is practically the same as that of late cabbage, but as the plants will withstand several degrees of frost, they grow late into the fall. They are more tasty after the first light frost. Packet, 5c; ounce, 20c.

**Emerald Isle.** Grows to medium height and is exceedingly hardy. Best for greens because of their very fine flavor. Produces new shoots as fast as leaves are used. The leaves are closely curled.

**Tall Green Curled Scotch.** This variety grows about 2 feet high and has splendid dark green, curled and wrinkled leaves. It is very hardy and vigorous grower. Improved greatly after first slight frost.

**Dwarf Green Curled.** Exceptionally fine for ornamental garden use, also good for greens. The leaves are beautifully curled and a brilliant green.

**Cow Kale or Thousand Headed.** The most valuable green feed for Pacific Coast dairymen. It is grown the same as stock cabbage.

**LEEK. American Flag.** Used very extensively through the entire country. A very strong hardy grower that is very easily cultivated in the home garden. It is broad leaved, with rather short but very thick stems.

Packet, 10c; ounce, 35c.

**LETTUCE.** Crisp, tender lettuce, the most desirable of all salad plants. Can best be grown with the strictest attention to its moisture, soil and climatic requirements. There are many varieties and types of lettuce, however for the home gardener we can segregate them into two varieties, namely, head variety and loose-leaf variety. The first is by far the most desirable but the most difficult to grow. The second is less desirable but so much easier to grow that most beginners will do well to select one of its varieties.

Lettuce can easily endure several degrees of frost especially in the seedling stage which greatly facilitates the handling in the early spring. However, this popular vegetable cannot be grown in extreme heat.

Any good garden soil will grow lettuce of a sort but the most favorable soils are rich sandy loam. Some varieties like Grand Rapids do best on good heavy soils with considerable clay in them. Lettuce soils should not be acid, if they are in this condition they should be limed. However, more important than the texture of the soil is the problem of moisture. If this is not available do not attempt to grow this vegetable.

#### HEADING VARIETIES

Packet, 5c; 1/2 ounce, 20c; ounce; 30c.

**Portland Seed Co.'s Crispette.** Heads are large, firm, crisp and tender. Bright green, curly leaves cover the outside. Solidity of the heads is insured by the large, white main ribs of leaves which curve toward the center. Withstands hot weather far better than most varieties and exceedingly tasty.

**New York or Wonderful.** The best head lettuce for market gardeners. It is large, very solid, tender, crisp and sweet. Beautifully blanched to a creamy white with brighter green outer leaves. A very hardy and rapid grower, also deep rooted.

**Hanson** (Improved Hard Heading Stock). One of the very best. The heads are green on the outside and cream colored on the inside. It withstands the hot sun very well and stays crisp for quite some time.

Other Varieties—**Brown Dutch, New York 12, Big Boston.**

#### LOOSE-LEAF VARIETIES

Packet, 5c; 1/2 ounce, 20c; ounce, 30c.

**Grand Rapids.** This variety is the standard hot-house lettuce for forcing. It also does exceedingly well in the open ground. The leaves are light yellowish green, slightly crimped, crisp and tender.

**Simpson's Early Curled.** Very fine for early planting and forcing. The leaves are finely curled and wrinkled. It is very tasty and crisp and does not wilt readily.

Other Varieties—**Chicken Lettuce, Prize-head, Black Seeded Simpson.**

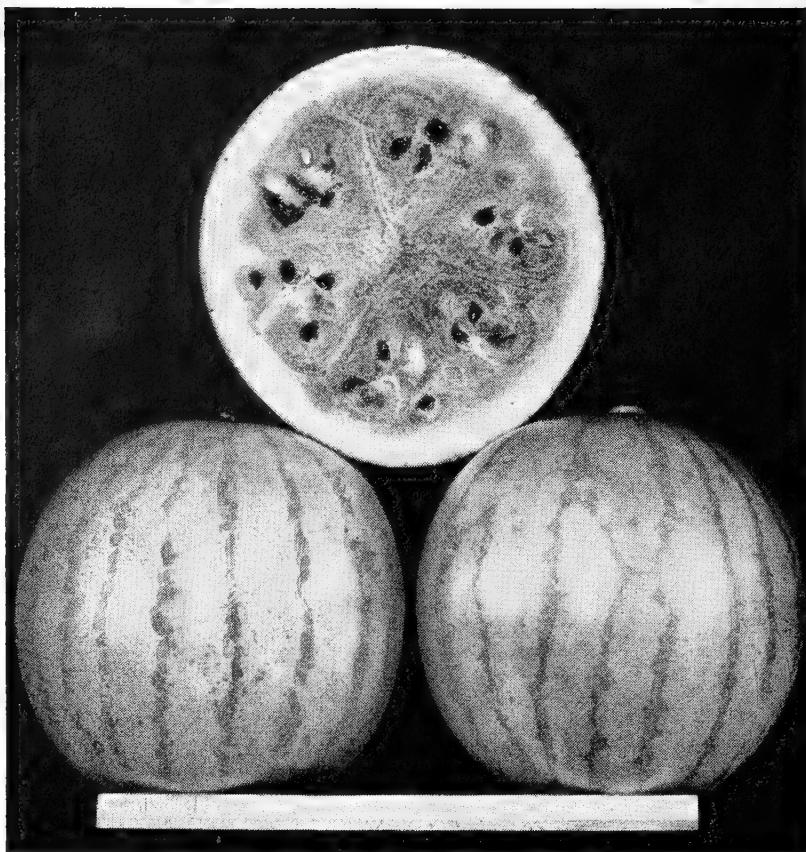


An effective all purpose dust which controls both sucking and chewing insects. Also contains Copper and Sulphur which controls fungous diseases.

Packed in a ready to use dust gun which can be refilled.

10 oz. Duster pkg. 50c

20 oz. Refill pkg. 79c.



BLACK-SEEDED ICE CREAM MELON

**MELONS.** The term melon, as commonly used, includes the fruits of two distinct types, namely the Muskmelon or Cantaloupe and the Watermelon. Both of these types require hot weather during the day and warm evenings in order to fully ripen the fruit. We do not recommend growing melons in the Western section of the Northwest, however, there are certain types that do fairly well in this section.

Melons thrive on a well-drained fertile soil; for early crops a light, sandy loam is preferred. Excessive alkali should be avoided. Manures or fertilizers are not generally used in the principal producing regions, the fertility being maintained by rotation and the use of green manure crops. However, where this is not available, it is advisable to use a good commercial fertilizer in a mild manner.

In growing melons it is necessary to allow a great deal of room for spreading vines. The seed may be planted as soon as the ground is warm and weather conditions permit. The hills should be approximately 6 feet apart.

### WATERMELONS

**All Watermelons—Packet, 5c; ounce, 15c.**

**Klonidke.** Rind is a beautiful dark green and exceptionally thin. The interior of the melon is a distinctive flesh color. Grow uniform in shape and size and ship very well.

**Sweetheart.** The vines are vigorous and productive. Fruits are large, oval, heavily mottled, dark and bright green, rind thin, flesh bright red, firm, sweet and tender.

**Other Varieties—Burrel Gem, Large Yellow Cantaloupe, Small Green Nutmeg, Osage or Miller's Cream, Early Hackensack, Hale's Best, Honey Dew Pink Flesh, Honey Dew Green Flesh, Perfecto, Banana, Persian.**

### CASABA MELONS

**Golden Beauty.** A beautiful bright golden yellow, wrinkled skin. The fruits are globular shaped and mature very early. The flesh is white and very thick. Exceedingly tender, rich, juicy and "honey sweet." **Packet, 5c; ounce, 15c.**

**ONIONS.** There are two types of onions that are most commonly grown by home gardeners—the young green or bunching onions and the mature bulb or dry onion. Green, or bunching onions, may be produced from seed, sets or multiplier bulbs. The set method is generally used among home gardeners for the earliest green onions. However, the seed method produces a much better quality of onion and is the common method among the market gardener trade.

Onions require a rich, well drained soil, but any good garden soil will be satisfactory so long as it is not too stony. To be sure that the soil is rich enough, use a pound of well rotted manure to each square foot, and in addition use four or five pounds of commercial fertilizer to each 100 square feet.

The soil must be moist, as the plants will not thrive in dry sites. Onions are grown successfully in nearly all but the desert states, but they thrive best in the comparatively cool sites.

**Packet, 10c; 1/2 ounce, 40c; ounce, 75c.**

**Oregon Yellow Danvers.** Bulbs large, half globe, small neck, with thin brownish skin. Flesh firm, white and fine grained. Ripens early and a good keeper.

**White Bunching.** Outstanding for green onions. The young sprouts are crisp and mild, attaining a good size before the bulb forms.

**Sweet Spanish.** A large globe-shaped brown onion, weighing one to three pounds. Flesh mild and sweet.

**Crystal Wax Beruuda.** Medium size, pure waxy white. One of the mildest sorts grown.

**Other Varieties—Australian Brown, Prizetaker, Yellow Globe Danvers, Large Red Weathersfield, White Portugal, Yellow Bermuda.**

**OKRA or GUMBO.** Grown for its green pods, which are used in soups, stews, etc., for their rich flavor and substance.

**Packet, 5c; ounce 20c.**

**Improved Dwarf Green.** Very early, with long, green, slender pods.

**White Velvet.**

**PARSNIPS.** Culture same as for carrots. May planting considered best. **Hollow Crown or Long White.** Long, white, smooth, tender, sugary, excellent flavor. Very hardy. Will keep through the winter without protection.

**Packet, 5c; ounce 25c.**

**PARSLEY.** Plain. Plain leaves, flat, dark green. Used for flavoring and drying.

**Packet, 5c; ounce, 20c.**

**Turnip Rooted or Hamburg.** Roots used for flavoring soups, stews, etc.

**Extra Double Curled.** Dark green, moss-like leaves, finely curled.





EARLY SCARLET GLOBE

**RADISH.** **All Radishes — Packet, 5c;  $\frac{1}{2}$  ounce, 15c; ounce, 20c;** The common Radish will germinate in four to five days and if grown properly will have useful roots ready to harvest in twenty-eight to thirty days. If it takes longer than this the roots will be spongy, acid or woody, hence useless. The secret of getting crisp, delicious radishes is quick growth; for this they need a rich mellow soil. Sow the seed about one-third of an inch deep in drills not over 8 to 12 inches apart.

All through the spring a succession should be sown every ten days. Keep in mind that an old radish is a worthless one and being harvested as soon as possible, they must be quickly grown and of course kept thoroughly cultivated. It is advisable to use crude Naphthalene Flakes in the soil at the time of sowing seed. This will protect the crop from soil insects such as maggots and worms.

**Early Scarlet Turnip.** White Tipped. Turnip-shaped roots tipped with white. Flesh white, crisp, tender and sweet. Tops small. Matures very early.

**French Breakfast or Half Long.** Excellent for both home and market gardening. Tops small, roots oblong and blunt. Scarlet with white bottom; flesh white, crisp and sweet. Splendid quality.

**Early Scarlet Globe.** Matures very early. A bright carmine-red color. Perfect oval shape and ideal size makes this an excellent radish for market. They reach this size in about 25 or 30 days are best when not quite full grown.

**White Icicle.** A popular white radish. Roots long, clear, white, especially mild.

Other Varieties—**Early Scarlet Turnip, Long Black Spanish, China Rose Winter.**

**SPINACH.** **All Spinach—Pkt., 5c; oz., 20c.** Spinach is a cool season annual, grown for greens. No spinach will stand extreme summer heat without "shooting" seed stalks. For this reason the seed must be sown early in the spring or late in the summer to avoid the danger of the crop maturing in July or August. For spring and summer use sow as early as the ground can be worked and make successive plantings every two weeks until May 15th. The leaves will be ready for use four or five weeks after sowing. For Autumn use, sow seed about August 1st. Spinach will grow very large and can be cut from the first of September until the ground freezes.

**Improved Thick Leaf.** Believed by many as the finest spinach on the American market today. It is the largest-leaved spinach grown and is exceedingly crisp, tender and tasty. It grows rapidly and remains in good condition a long time, making it fine for market. The medium-green leaves are large, rounded, slightly crumpled, succulent and tender.

**Prickly Winter.** Hardest variety. Must be sown in the fall. Seeds prickly. Leaves long, pointed, thick and succulent.

Other Varieties—**Nobel Giant Leaved, King of Denmark Long Standing.**

**KOHL-RABI.** **Early White Vienna.** This is the best table variety and matures very early. If used for table it is the tastiest when the bulbs are 2 inches in diameter. The plants are light green with white flesh of excellent quality. **Packet, 10c; ounce, 25c.**

**Early Purple Vienna.** Standard early sort. The plants are small, with dark green leaves spotted with purple. The exterior is purple, but flesh is white. **Packet, 10c; ounce, 25c.**

**RUTABAGA or SWEDE.** **Improved American Purple Top.** The leading variety. Large, immense yielder. Superior in every way.

**Packet, 5c; ounce 20c.**

**SALSIFY.** **Mammoth Sandwich Island.** Roots large, smooth, very hardy. May remain in ground during winter or be stored in dry earth or sand. **Packet, 5c; ounce, 30c.**

**SQUASH.** If you have space and prefer to grow the vine-like forms, the hills should be at least 8x8 feet apart, but if space requirements make the bush forms imperative, and they are far easier to grow, cultivate and harvest, the hills can be about 30 inches apart each way.

It is useless to put squashes in a heavy, wet soil, for they grow too slowly in such places. It is better to select a warm sandy loam, upon which they thrive if it can be made rich enough. Being spaced so far apart, there is no use in a program of general soil enrichment for squashes, but every reason for concentrating

the fertilizer under the hills. A good plan is to dig out about 2 feet of indifferent soil and fill in with a half-and-half mixture of sandy loam and well-rotted manure. Or if this is lacking, mix about 1 pound of a good complete commercial fertilizer with the soil.

For the summer squashes, unless your soil warms up very slowly, the seed should be planted directly in the hills, 4 to 5 seed to a hill, which should ultimately be thinned to 2 or 3 plants, depending upon their vigor and ravages of cut worms. It will help greatly if Naphthalene Flakes are used at the time of planting.

For the winter squashes or for any that have long, sprawling vines, it is better to start them in the hotbed, as outlined above, if you live in a region with a short growing season. Otherwise, some of the late fruits will be caught by frost before maturity. In any case, the vine-like ones should be watched to see that all the growth does not run to vine and leaf at the expense of fruit. This is especially likely in rich soils or in one that gets extra top-dressing of fertilizer. By keeping vines well pinched back it will develop better fruits.

**All Varieties Squash—Packet, 5c; ounce, 20c.**

#### WINTER VARIETIES

**Improved Hubbard Squash.** Large and of warty Hubbard type. Shell dark green, hard, moderately warted. Flesh light orange, very dry and richly flavored. One of the best winter squashes.

**Banana Squash.** One to two feet long. Flesh firm, orange yellow. Rind smooth, greyish green color. Excellent flavor and splendid keeping qualities.

**Golden Hubbard Squash.** Same in size, shape and quality as the green Hubbard, except that it is bright red or golden color and somewhat earlier. Excellent keeper.

**Table Queen Squash.** Small, dark green, acorn shape. Flesh rich yellow, dry, richly flavored. Medium early. A good keeper.

Other Varieties of Winter Squashes: **Boston Marrow, Mammoth Chili, Sibley or Pike's Peak and Warty Hubbard.**

#### SUMMER VARIETIES

**Cocozelle or Italian Marrow.** Skin dark green, becoming marbled with yellow at maturity. Flesh pale green, thick, firm and tender. Best when 5 to 6 inches long.

**Early Summer Crookneck.** Earlier and larger than ordinary crookneck. Skin yellow, thin, hard and warty. Flesh tender and of good quality.

**White Bush Scallop.** Early, medium size, somewhat flattened with creamy white skin. Flesh milk white, firm and richly flavored.

BE A THRIFTY GARDENER.  
BUY ONLY THE AMOUNT OF  
SEED YOU WILL ACTUALLY  
USE.

**TURNIPS.** All Varieties Turnips—Pkt., 5c; ounce, 20c. Turnip seed sown about the last week in July or early August will provide a crop when they are most wanted in the late fall and winter. The plant is a biennial and if left in the ground all winter will bloom and set seed the following spring. However, we do not recommend this as the second growth plants are not hardy and many times register a crop failure.

The seeds should be sown in drills about  $\frac{3}{4}$ -inch deep and thickly enough so that the plants can be thinned to 5 or 6 inches apart. For hoeing or a wheel cultivator, keep the rows about 15 inches apart.

The plant does best in the loose open loam, and the product is much better if quickly grown. While it is primarily a late fall and winter vegetable, very early varieties have been developed which may be sown as soon as the ground can be worked in the spring. Such can be harvested in the early summer, and should be, because if left in the ground they will go to flower and the roots are then soon useless.

Cultivate as for any other root crop, being careful not to injure young roots with tools. The plant responds to rich soil, but top-dressing with nitrate of soda should be avoided. If necessary, use any well-balanced commercial fertilizer, working it in between the rows about 5 weeks after the seed is planted. The turnip is a cool season crop and does not like hot dry regions.

**Purple Top White Globe.** Large, globe shaped. Purple on top, white below. Excellent quality and highly recommended for home use as well as field crop.

**Purple Top Strap Leaf.** An early variety. Roots medium size, flat. Purple above the

ground, white below. Flesh white, firm but tender and may be used for table or stock feeding.

**Golden Ball.** Medium size, round and yellow. Flesh firm, hard and most excellent flavor. Keeps well and a fine table variety.

**Other Varieties:** Early Flat White Dutch, Early White Milan, Early Snowball, Early Purple Top Milan, Pomeranian White Globe, White Egg, Yellow Aberdeen, Cow Horn, Bortfield.

**TOMATOES.** All Varieties Tomatoes—Packet, 10c;  $\frac{1}{2}$  ounce, 25c; ounce, 45c. The tomato is perhaps more tender than any other garden plant in such general culture. It is blackened by the least touch of frost, and will grow well only where there is sufficient heat. However, while many home gardeners will prefer to buy potted plants at the time they should be planted out, there is little need to do this, for tomatoes are among the easiest of vegetables to raise from seed. In your calculations for the early varieties allow 7 to 8 weeks from the time of sowing seed to the proper date in your locality for setting the plants in the garden.

The seed should be sown in fine, not too rich soil, about  $\frac{1}{4}$ -inch deep, either in tiny drills or broadcast as you prefer. Keep the soil moist but not wet. When the seedlings are about  $2\frac{1}{2}$  inches high, brick them out and re-plant on 2x2 inch intervals and allow them to grow until they are 4 to 5 inches high. By this time they are ready for transplanting into the open ground.

Tomatoes need constant cultivation to keep down weeds and conserve soil moisture, upon which they draw heavily. This is especially true in the early stages of the plants allowed to

sprawl. Later these cannot be cultivated without injury to the tender, rather brittle stems.

Any good garden soil will grow tomatoes. Experience has shown that too much (especially nitrogenous) fertilizer or manure close to the plants makes them more likely to produce leafage than fruit. If you are prepared to pinch off the excess leaves, they may be fertilized as for any other rich feeding crop.

**Bonny Best.** Early, hardy and a scarlet fruit variety. Medium sized, solid, smooth and quite round. Very productive with excellent quality.

**Chalk's Early Jewel.** Fruits large, bright red, round, smooth, solid and almost seedless. Recommended for market and home gardeners.

**Break O' Day.** Wilt resistant. Vines vigorous open growth and very productive. Fruits scarlet medium to large size true globe shape. Slightly earlier than Mariglobe, an excellent variety for the home and market garden.

**John Baer.** Brilliant round fruits, high crown, smooth and delicious flavor that is easily peeled. Excellent keeper, yields well and a good shipper.

**Mariglobe.** Very resistant to disease. Fruits are large, globe shaped and deep red. Excellent for slicing and canning.

**Prichard.** Newest to be introduced by U.S. Department of Agriculture. Strongest disease resisting tomato yet offered. No core, small seed pockets and evenly colored throughout.

**Other Varieties:** Dwarf Champion, Burbank, Stone, Golden Queen, Yellow Pear, Yellow Plum and Ground Cherry.

# Now FIVE POUNDS FOR FIFTY CENTS!

Diamond Quality Naphthalene Flakes are now used extensively throughout the west for the control of many soil pests. This material is highly recommended by the U.S. Department of Agriculture for the control of Wireworms. One pound of material thoroughly worked into 50 square feet of ground will give from 97% to 100% kill.

While other prices are going up Naphthalene Flakes have been reduced. The new 5-pound package now sells for 50c at dealers everywhere. Get your supply early and work it into the ground before planting your Victory Garden.

Diamond Quality Naphthalene Flakes is also recommended for the control of Gladiolus Thrip. One ounce of flakes to every 100 bulbs, placed in a paper sack right after digging.



See the directions on the package for complete information.

**1 1/2 pound package 25c  
5 pound package 50c**

# Vegetable Seed PLANTING CHART

KIND OF SEED	Time to Plant Outdoors	Distance for Plants		SEED REQUIRED		Ready to Use
		Bet. Rows	In the Row	Row	Acre	
ASPARAGUS.....	February to April....	5 to 6 ft.	18 to 24 in.	1 oz. to 40 ft.	2 to 3 lbs.	2nd Spring
BEANS, Bush.....	April, May and June.	2 to 3 ft.	3 to 4 in.	1 lb. to 250 ft.	90 to 100 lbs.	40 to 65 days
BEANS, Pole.....	April, May and June.	4 ft.	2½ to 3 ft.	1 lb. to 125 hills	30 to 40 lbs.	70 to 90 days
BEANS, Lima.....	May and June.....	2 to 4 ft.	10 to 36 in.	1 lb. to 80 hills	50 to 60 lbs.	90 to 130 days
BEETS, Table.....	March to July.....	14 to 20 in.	2 to 4 in.	1 oz. to 100 ft.	10 to 15 lbs.	45 to 60 days
BROCCOLI*.....	June to August.....	24 to 30 in.	14 to 18 in.	1 oz. to 1500 plants	6 to 8 oz.	120 to 150 days
BRUSSEL SPROUTS*.....	April to June.....	30 to 36 in.	18 to 24 in.	1 oz. to 2000 plants	6 to 7 oz.	100 to 120 days
CABBAGE, Early*.....	February to April....	30 to 36 in.	16 to 24 in.	1 oz. to 2000 plants	6 to 8 oz.	90 to 110 days
CABBAGE, Late*.....	May and June.....	36 to 42 in.	24 to 30 in.	1 oz. to 2000 plants	6 to 7 oz.	110 to 120 days
CARROTS.....	April to July.....	12 to 24 in.	2 to 3 in.	1 oz. to 250 ft.	3 to 4 lbs.	55 to 80 days
CAULIFLOWER*.....	March to June.....	3 to 4 ft.	24 to 30 in.	1 oz. to 1500 plants	6 to 7 oz.	95 to 110 days
CELERY*.....	April to July.....	18 to 36 in.	6 to 10 in.	1 oz. to 8000 plants	4 to 5 oz.	120 to 150 days
CHICORY.....	March to May, Sept.	16 to 20 in.	6 to 8 in.	1 oz. to 200 ft.	3 to 4 lbs.	90 to 120 days
CHIVES.....	April and May.....	12 to 18 in.	4 to 6 in.	1 oz. to 200 ft.	4 to 5 lbs.	125 to 150 days
SWEET CORN.....	April to June.....	36 to 42 in.	9 to 12 in.	1 lb. to 100 hills	12 to 15 lbs.	55 to 90 days
CRESS.....	Feb. to May, Sept.	12 to 18 in.	4 to 6 in.	1 oz. to 250 ft.	3 to 4 lbs.	45 to 60 days
CUCUMBER.....	April to July.....	4 to 6 ft.	10 to 12 in.	1 oz. to 100 hills	2 to 3 lbs.	50 to 75 days
EGG PLANT*.....	April and May.....	24 to 30 in.	18 to 24 in.	1 oz. to 1500 plants	4 to 5 oz.	125 to 140 days
ENDIVE.....	May and June.....	18 to 20 in.	10 to 12 in.	1 oz. to 300 ft.	3 to 4 lbs.	90 to 100 days
HERBS, Annual.....	March and April....	20 to 24 in.	10 to 12 in.	1 oz. to 200 to 600 ft.	3 to 10 lbs.	125 to 150 days
HERBS, Perennial.....	April to June.....	20 to 24 in.	10 to 12 in.	1 oz. to 200 to 600 ft.	3 to 10 lbs.	Next Season
KALE.....	Mar. and Apr., Aug.	18 to 24 in.	12 to 18 in.	1 oz. to 2000 plants	6 to 8 oz.	55 to 60 days
KOHL RABI.....	March to May.....	16 to 24 in.	6 to 8 in.	1 oz. to 300 ft.	3 to 4 lbs.	50 to 70 days
LEEK.....	May to June.....	14 to 20 in.	4 to 6 in.	1 oz. to 150 ft.	4 to 5 lbs.	120 to 150 days
LETTUCE, Leaf.....	March to September.	12 to 18 in.	4 to 6 in.	1 oz. to 600 ft.	4 to 5 lbs.	40 to 70 days
LETTUCE, Head.....	February to August..	12 to 16 in.	12 to 14 in.	1 oz. to 3000 plants	1 to 1½ lbs.	70 to 90 days
MUSKMELON.....	April to June.....	6 to 8 ft.	4 to 6 ft.	1 oz. to 40 hills	3 to 5 lbs.	90 to 150 days
WATERMELON.....	May and June.....	8 to 12 ft.	6 to 10 ft.	1 oz. to 25 hills	4 to 6 lbs.	100 to 160 days
MUSTARD.....	March to May, Sept.	12 to 18 in.	2 to 3 in.	1 oz. to 600 ft.	4 to 5 lbs.	60 to 90 days
OKRA*.....	April and May.....	2½ to 3 ft.	18 to 24 in.	1 oz. to 250 plants	5 to 6 lbs.	70 to 90 days
ONION, Seed.....	April and May.....	12 to 18 in.	2 to 4 in.	1 oz. to 200 ft.	4 to 5 lbs.	125 to 150 days
ONION, Sets.....	October to May.....	12 to 18 in.	2 to 3 in.	1 lb. to 50 ft.	2 to 3 sacks	50 to 70 days
PARSLEY.....	March to May, Sept..	18 to 24 in.	12 to 16 in.	1 oz. to 250 ft.	3 to 4 lbs.	65 to 90 days
PARSNIP.....	April to June.....	15 to 20 in.	2 to 4 in.	1 oz. to 300 ft.	4 to 6 lbs.	130 to 145 days
PEAS, Dwarf.....	Nov. and Feb. to June	18 to 24 in.	1 to 2 in.	1 lb. to 120 ft.	150 to 175 lbs.	45 to 75 days
PEAS, Tall.....	Nov. and Feb. to June	4 to 6 ft.	1 to 2 in.	1 lb. to 120 ft.	100 to 125 lbs.	60 to 90 days
PEPPER*.....	May and June.....	18 to 24 in.	14 to 16 in.	1 oz. to 1500 plants	3 to 4 oz.	130 to 150 days
POTATOES, Irish.....	March to June.....	24 to 36 in.	14 to 18 in.	1 lb. to 15 ft.	7 to 9 sacks	90 to 150 days
PUMPKIN.....	May to July.....	8 to 12 ft.	6 to 8 ft.	1 oz. to 30 hills	4 to 5 lbs.	75 to 90 days
RADISH.....	February to Sept....	12 to 18 in.	1 to 2 in.	1 oz. to 100 ft.	8 to 10 lbs.	20 to 75 days
RHUBARB.....	March to June.....	30 to 36 in.	16 to 24 in.	1 oz. to 250 ft.	6 to 8 oz.	3rd Year
RUTABAGA.....	May and June.....	18 to 24 in.	6 to 8 in.	1 oz. to 400 ft.	2 to 3 lbs.	90 to 120 days
SALSIFY.....	March to May.....	18 to 24 in.	2 to 4 in.	1 oz. to 120 ft.	8 to 10 lbs.	120 to 150 days
SPINACH.....	Feb. to May, Sept....	12 to 18 in.	3 to 6 in.	1 oz. to 100 ft.	10 to 12 lbs.	45 to 60 days
SQUASH, Bush.....	April to June.....	3 to 4 ft.	3 to 4 ft.	1 oz. to 30 hills	4 to 6 lbs.	65 to 70 days
SQUASH, Winter.....	May to July.....	10 to 12 ft.	8 to 10 ft.	1 oz. to 15 hills	3 to 4 lbs.	120 to 140 days
SWISS CHARD.....	March to July.....	12 to 18 in.	4 to 8 in.	1 oz. to 150 ft.	6 to 8 lbs.	45 to 60 days
TOMATO*.....	April to June.....	3 to 4 ft.	2 to 3 ft.	1 oz. to 3000 plants	3 to 4 oz.	125 to 150 days
TURNIP.....	March to August.....	12 to 15 in.	3 to 4 in.	1 oz. to 400 ft.	2 to 4 lbs.	45 to 90 days

\* Planting dates shown for crops marked "\*" are intended to be for setting plants into the garden. Seeds should be sown 40 to 60 days earlier, indoors or under glass.

See should be covered from three to five times its diameter. Press soil down firmly. Keep moist continuously.

The above chart gives distances between rows for hand cultivation; where horse or tractor is used the rows should be farther apart.

# Dusting and Spraying

Plants become ill just as human beings do. When you walk or work amongst them in your garden, watch out for trouble. You are your garden's physician. Anything that looks wrong probably is wrong; a spot on a leaf, a leaf eaten away, tiny objects clinging to a branch, etc.

First, just what will you meet up with: Gardens are attacked by, (1) insects, (2) diseases, and (3) miscellaneous pests.

## 1. INSECT PESTS

Insects must eat—that is why they come after the growing things in your garden. There are two main kinds: biting insects, and sucking insects. The biters are controlled with stomach poisons placed on the leaves they eat. The suckers do not get their food from the surface of the plant, but from its juices, and must be fought with "contact insecticides" which will kill them in other ways.

## 2. PLANT DISEASES

Fungi or bacteria may be the cause of the trouble if you are unable to discover actual insects about a troubled plant. These are controlled with spraying or dusting of the plant. In some cases, the soil must be disinfected. In still other cases, when you find that the disease is transmitted by an insect from one plant to another the insect has to be controlled.

## 3. MISCELLANEOUS PLANT PESTS

These include gophers, slugs, snails, squirrels, etc.

## HOW TO IDENTIFY GARDEN PEST TROUBLES

The best way is to know the appearance of a plant after it has been attacked, and to have pictures and descriptions of each pest. Remembering here the different kinds of pests, biting and sucking in-

sects, fungous and bacterial diseases, and the miscellaneous pests, we shall talk about each in turn. On the following pages you will find tables listing the varieties of pests you may have trouble with, what harm they do and how to control them.

### BITING INSECTS

When you come across leaves which seem to have been eaten away in part or entirely, or roots, tubers, or another part of a plant with an eaten look, your garden is being visited by biting insects. Some biters burrow into fruit and lay eggs there. Some tunnel into other parts of the plant.

Most of the biting insects can be killed with lead arsenate. All the control measures given in this chapter are sold under various trade names.

In the table, you will notice, most of the biting insects are beetles, caterpillars, grasshoppers and worms and the chief remedy is lead arsenate spray or dust.

### SUCKING INSECTS

Some times you will shake a flower and tiny specks like pepper will fall out of it. Or you may see a leaf unnaturally curled, and sticky to touch. At other times a tiny insect will jump from a leaf if you disturb it.

You may see a cluster of things like minute barnacles or little eggs clinging to a stem or twig. Or you may not see any actual insects, but only a strange yellowing of the leaves, tender young leaves stunted and curling, distorted buds, discoloring of the plant, blackening, fungous growing in a sticky mass of honey-dew, stunted flowers, or little galls on stems or the upper parts of leaves.

When you notice any of these signs, the trouble is some sucking insect or other. None of them do all of these things; each has its specialty.

Note on the table on the next page that



a combination oil nicotine spray is the remedy in most cases here, and that the pests are spiders, and the tiniest mites, bugs or flies.

## FUNGOUS DISEASES

If there are gray, powdery growths on your plants; tiny red, brown or black pustules (elevations looking like pimples or blisters); holes in the leaves, red spot on the fruit; dying buds; soft brown spots; curled, distorted leaves; black spots on your Roses; or premature falling of leaves—the trouble is probably fungi (microscopic plant organisms, living as parasites on your plants).

Note, in the table, the importance of Bordeaux mixture in controlling fungous diseases.

## BACTERIAL DISEASES

When your leaves, twigs or branches die in an unaccountable manner, they may be attacked by some bacterial disease or blight. Potatoes, tomatoes and celery so attacked may sometimes be controlled with Bordeaux mixture. Peaches and walnuts are probably doomed, however, although you can try the same control measure with them. It is sometimes effective with peaches.

## MISCELLANEOUS PLANT PESTS

Most of the time you will see them "in person," and so will know that they are around. Snails can either be hand picked and stepped on (wear gloves if you are squeamish about handling them); or can be killed with poisoned bait.

Other pests which succumb to poisoned bait—and usually one preparation will do for them all—are sow bugs, slugs, and earwigs. Special commercial ant poisons are on the market, one of the best being light poison which does not kill the ants at once. They are attracted to it, drink their fill, return to their hills and feed it to the young; thus the entire colony is exterminated at its source.

Moles are caught with regular mole traps. Squirrels, gophers and rabbits are discouraged with poisoned barley, which you can also buy. Success has been had in gopher control with fumigating bombs which are ignited, dropped in the holes quickly, and the holes covered at once. Gophers, however, are best trapped.

# Agricultural and Field Seed

**Grimm Alfalfa.** 15 pounds per acre. The most important member of the variegated group in the United States. Introduced from Germany by Wendelin Grimm.

A very winter hardy, long-lived variety. The tap root shows a tendency to branch and the crowns are low set and spreading. These characteristics contribute much toward its ability to resist extreme cold, alternate freezing, thawing and heaving. Succeeds in most types of soil except those heavily charged with alkali, will not grow in waterlogged soil.

**Cossack Alfalfa.** 15 pounds per acre. An introduction from Russia and a hybrid between common and yellow-flowered Alfalfas.

Growth is generally upright with stems medium size, plants are very leafy and fairly large leaves. Flowers are variegated ranging from white and yellow to dark purple.

Rooting system is large with heavy deep penetrating tap root being the rule. A very winter hardy variety adapted for growing under practically the same conditions as Grimm Alfalfa.

**Common Alfalfa.** These are various strains of common Alfalfa distinguished by the name of the state in which grown, such as Idaho, Oregon, Northern California, etc. Common Alfalfa from above named sections is adapted to Oregon and Washington climatic conditions. Common Alfalfa differs from the Grimm Alfalfa mainly in the root system. The tap root in common does not show the tendency to branch and the crowns are not as spreading.

**Ladak Alfalfa.** An introduction from Northern India.

The growth in general is quite upright with stems medium size, plants are very leafy, medium size leaves. Flowers are variegated, ranging from whitish and yellow to very dark purple.

The rooting system is extensive, with most plants being tap rooted.

One of its outstanding characteristics is its ability to produce a heavy first crop. It is sometimes referred to as one-cut Alfalfa, mainly for the reason, that under certain conditions its comeback is rather slow. It is very well adapted to conditions where only one crop of forage can be secured a year because of lack of moisture and short growing season.

It is extremely winter hardy, and long-lived and is much more resistant to bacterial wilt than Grimm, Common and other varieties closely related to these.

**Alsike Clover** (*Trifolium Hybridum*). 12 pounds per acre. A long-lived Perennial, adapted to a wider range of both climatic and soil conditions than Red Clover. Thrives well on clay, clay loams, sandy loams and muck soils providing abundant moisture is available. Well survive where soil is waterlogged, making it well adapted to growing under irrigation. An excellent pasture plant and when sown for hay is usually mixed with Red Clover, Timothy or Red Top.

**Red Clover** (*Trifolium Pratense*). 15 pounds per acre. Usually classed as a short-lived perennial and is considered the most important of all leguminous forage crops. Requires a well drained soil, does better in clay soils than in loams and better in loams than in sandy soils. Is especially intolerant to waterlogged soils.

**White Dutch Clover** (*Trifolium Repens*). 8 pounds per acre. A long-lived but shallow-rooted perennial. The stems creep on the surface of the ground and root abundantly. On this account the growing point is seldom in-

ured by mowing or grazing. Grows in practically all types of soil provided moisture is abundant, thriving best in loams and clay soils. White Clover is considered to be one of the most important pasture plants, generally used in pasture mixtures and is also used to a large extent in lawn grass mixtures.

**Ladino Clover** (*Trifolium Repens latum*). 5 pounds per acre. Also known as Giant White Clover, growing about twice the size of White Dutch Clover. It is a Perennial of medium long life, having a short tap root. The surface stems lie flat on the ground and commonly produce fibrous roots at the joints. Ladino Clover usually makes a growth of 8 to 12 inches in height. Can be grown on rather shallow soils where well supplied with lime, phosphate, humus and moisture. Ladino is not a deep-rooted plant and thrives best on medium heavy type soils where there is constant but not excessive moisture. This is primarily a pasture plant and may be sown alone or with a combination of other grasses.

**Mammoth Red Clover** (*Trifolium Pratense Perenne*). 15 pounds per acre. A large variety of red clover more decidedly Perennial than common Red Clover requiring the same climatic and soil conditions. The stems are long, coarse and generally spreading. Mammoth red blooms about 10 days later than common red and grows more slowly after mowing. Its coarse growth makes the hay less relished by stock, however its heavy growth makes it an excellent soil crop.

**White Sweet or Bokhara Clover** (*Melilotus Alba*). 20 pounds per acre. A Biennial having a strong tap root, produces numerous leafy stems, growing from 4 to 6 feet in height when firmly established. Grows readily on practically all types of soils. Endures poorly drained soils better than Alsike, used mainly as a pasture plant and for green manure.

**Crimson Clover** (*Trifolium Incarnatum*). 15 pounds per acre. An annual plant having a strong tap root, shows no very marked soil preferences, succeeding on both sandy and clayey soils as long as they are well drained. From the crown of the root numerous upright stems develop which reach an average height of one or two feet. Has a high nutritive value and can be used for either hay or pasture, valuable for soil purposes in short rotations, as the green matter produced is heavy, and the roots penetrate deep into the ground.

**Yellow Sweet Clover** (*Melilotus Officinalis*). 20 pounds per acre. A biennial having the same habits of growth as the White Sweet, requiring the same soil and climatic conditions. Stems are less leafy and smaller in size. The plant does not grow quite as tall and is about two weeks earlier.

**Yellow Sweet Clover Annual** (*Melilotus Indica*). 20 pounds per acre. Known as Yellow Blossom sour clover. Not recommended for forage or hay, used most entirely for cover crop. Soil requirements same as other sweet clovers.

**Subterranean Clover** (*Trifolium Subterraneum*). 12 to 15 pounds per acre. The name of this clover is derived from its habit of pushing the seed head into the soil sometimes to a depth of two inches, where the seeds mature and germinate when favorable conditions develop.

Subterranean Clover is an annual that starts growth in the fall or late winter.

The stems are prostrate, assuming the form

of runners. The leaf is similar to that of other clovers. The flower heads usually bear three small white to pinkish white flowers in a cluster at the tip of the stalk. A single seed develops from each flower. The mature seed is dark purple, about double the size of a crimson clover seed.

Under Pacific Northwest conditions this clover probably requires for survival, at least 20 inches of rainfall during the fall, winter and spring, and the temperatures remaining above 10 degrees Fahrenheit. The plant does not appear to be tolerant of poor drainage. It will thrive on soils that are quite acid.

This plant starts growth much earlier in the spring than other legumes.

**Brome Grass** (*Bromus Inermis*). 20 pounds per acre. A long-lived Perennial with a creeping root-stock. These are much branched, roots at the joints and produces numerous upright stems. The stems are rather stout from 1 to 4 feet high, and carry many spreading, broad smooth leaves varying from light to dark green. The upright stems produced are scattered, therefore, the plants are not tufted but form loose mats. Brome Grass is adapted to regions of rather low rainfall, endures winter cold remarkably well and no other cultivated Perennial grass has shown a higher degree of drouth resistance. Refers rich loams and clay loams and has succeeded well in sandy soils.

**Buckwheat**. 25 pounds per acre. An erect growing Annual which under ordinary conditions attains a height of about 3 feet. Is not exacting as to soils. The rather light, well drained sandy loams seem best suited, however, good crops are produced on infertile, poorly tiled land.

Buckwheat is very sensitive to frost, however, the crop may be grown far toward the north. This is due to the short growing season of the plant amounting from 10 to 12 weeks. Japanese and Silverhull are the most commonly grown in the United States.

**Cheat or Chess** (*Bromus Secalinus*). A smooth annual grass from 1 to 3 feet tall with flat blades and open drooping panicles, sometimes grown as an annual hay crop, and should be cut when the seed is in the daugh stage. Adapted to the same soil conditions as wheat. The plants are similar to those of wheat and formerly the idea was held that cheat was a degenerative or changed form of wheat whence its name.

**Crested Wheat Grass** (*Agropyron Cristatum*). 15 pounds per acre. A hardy drouth-resistant Perennial bunch grass having an extensive root system, especially adapted to regions where the temperatures are severe and the moisture supply is limited. The plants have a dense, dark green foliage during the early part of the season, after seeding the plants appear less leafy but the stems are fine and when harvested early makes hay of excellent quality, does well on practically all soils ranging from light sandy loam to heavy clay.

**Dwarf Essex Rape**. 8 pounds per acre. There are several varieties of rape, however, Dwarf Essex is considered to be the best, in fact is the only one used for pasture and forage crop purposes. Rape is termed as a cool weather plant, therefore is adapted to our cool moist climate here in the Northwest and is not very exacting as to soil requirements.

**Lespedeza**. 15 pounds per acre. Classed as a summer annual, however, in sections where adapted will usually reseed itself and will thus occupy the land for two or more years. The plants are usually much branched, stems wiry, bearing numerous small leaves, under favorable

soil and climatic conditions the plants commonly grow about 12 inches high. Adapted to practically all types of soil if well drained near the surface. Requires a warm growing season and will not withstand frost. Used mainly as a pasture plant.

**Meadow Fescue** (*Festuca Elatior*). 20 pounds per acre. A deep-rooted, long-lived Perennial. The stems are 18 to 24 inches high, smooth, rather slender. Most of the leaves are produced by numerous sterile shoots from the root stock. The leaves are dark green, long and broad. Prefers rich moist or even wet soils, does not succeed well in sandy soils. Thrives as well as Orchard grass in shady places. It is better adapted for pastures than for meadows but may be used for both purposes.

**Millet.** 25 pounds per acre. The millets are rapid-growing annuals used primarily for forage production purposes. Requiring in general the same climatic and soil conditions as Sudan grass. The plants usually attain a height of 3 to 4 feet. The stems are erect, rather stiff and the leaves are long and broad.

The seed should not be sown until the ground is warm, usually about corn planting time.

Several varieties are used here in the Northwest, the most popular being German or Golden, Early Fortune or Hershey and Japanese, also known as Billion Dollar Grass.

**Mesquite** (*Holcus Lanatus*). 20 pounds per acre. This plant is primarily adapted to moist cool climates and under such conditions is not particular as to soil.

The plants form thick, rather high tussocks. The stems are erect, growing from 2 to 3 feet high. The whole plant has a velvety appearance hence the name Velvet Grass is sometimes used. Mesquite should be sown with a mixture of other grasses, a stock does not take to it readily when grown alone.

**Orchard Grass** (*Dactylis Glomerata*). 25 pounds per acre. A long-lived Perennial forming dense circular tufts, a typical bunch grass producing no stolons and hence never forms a complete sod. The stems are 2 to 3 feet high and are crowded and surrounded at the base by numerous heavy shoots. The leaves are long, broad and flat, rather soft in texture. Grows in practically all types of soil, being best adapted to clays or clay loams. Succeeds well in shady places and also does quite well where rainfall is rather scanty, starts growth early in the spring.

**Pasture Mixtures.** 35 pounds per acre. Owing to the fact that so many types of Pasture Mixtures are used, we realize that it would be impossible for us to prepare in advance mixtures that would conform with the requirements of each formula recommended.

Therefore we have confined our efforts to two Pasture Mixtures only, namely UP-LAND and LOW-LAND. In these two mixtures we use only the very best grades of seed carrying a high percentage of Purity and Germination and only those seeds that are adapted to the general soil and climatic conditions throughout the Pacific Northwest and for this reason we feel that either of these two mixtures will meet with the average general requirements.

**Reed Canary Grass** (*Phalaris Arundinacea*). 3 pounds per acre. A long-lived rather coarse Perennial grass. The plants are resistant to cold both as seedlings and mature plants. The rapidly spreading short underground stems soon form a dense sod growth starts early in the spring and continues until late fall. The plants grow from 4 to 6 feet in height. The stems are stout smooth and seldom lodge. The leaves are broad and nearly 1 foot long.

Reed Canary is especially adapted to swampy or overflow lands of sandy, mucky or peaty

nature, makes an excellent pasture plant and may also be used for hay.

**Italian Rye Grass** (*Lolium Multiflorum Lam*). 25 pounds per acre. A hardy short-lived grass, usually an annual. When seeded in spring, late summer or early fall, it makes rapid growth, furnishing grazing in remarkably short time. It is tender, very palatable to livestock and has excellent carrying capacity. The plants grow from 2 to 4 feet in height. Since Italian Rye Grass is a heavy seeder, if not kept closely grazed or mowed, many new plants appear from volunteer seeding. Adapted to the same soil and climatic conditions as other rye grasses.

**Sudan Grass** (*Andropogon Sorghum*). 25 pounds per acre. A tall annual, growing under favorable conditions to height of 4 to 6 feet. The stems are fine, leafy, perfectly erect, seldom lodging.

The plants stool abundantly and owing to the lack of root stocks never become troublesome as a weed. Sudan is grown primarily for forage production purposes and should not be sown until the soil is warm, usually about corn planting time. Many failures are traced direct to seeding in a cold soil. In general climatic and soil adaptations for Sudan are nearly identical with those of corn.

**Tall Meadow Oat Grass** (*Arrhenatherum Elatius*). 30 pounds per acre. A long-lived, deep rooted Perennial. Strictly a bunch grass growing to a height of 4 to 5 feet. The stems are generally dark green, leafy above the middle. The leaves are long, broad and rather soft in texture, usually a bright green almost yellowish. Can be grown on practically any kind of soil provided it is fairly moist, will not endure wet soils. It is one of the most drought resistant of the cultivated grasses. Makes a quick start after pasturing and stands pasturing well. One of the first grasses to start in the spring and the last to die in the fall.

**Timothy** (*Phleum Pratense*). 15 pounds per acre. A Perennial grass having a very short root stock and therefore grows in more or less compact tufts. The stems which usually reach a height of from 1 to 4 feet or more are smooth and generally erect. The leaves are generally short compared with the height of the plant. Timothy is adapted to cold, moist or wet lands also heavy clay soils. However, does not thrive on sour soils or impoverished sandy or shallow soils. Although root system is shallow it stands drought fairly well. It is very resistant to cold.

**Soy Beans.** 50 pounds per acre. The Soy Bean is a leguminous Annual growing to a height of 10 inches or more depending on soil conditions. The plant is erect and branching, quite leafy and producing numerous pods. The leaves vary in size and color depending on the variety. Soy Beans are a promising emergency leguminous hay crop for various places here in the Northwest.

Soy Beans grow on rather a wide range of soils, are quite drought resistant, and will stand excess moisture providing the water does not stand for any considerable length of time.

Should be sown about corn planting time, rows about three feet apart and the seed about 3 or 4 inches apart in the row.

**Vetches** make excellent feed, either green or as hay, and are also exceedingly useful as cover and green manure crops. They are usually seeded with grain, oats being the favorite for the reason separation is easily made when harvesting vetch for a seed crop.

**Common Vetch.** The most important annual legume grown in Oregon, used extensively as a green feed crop for spring and summer, also makes an excellent manure and cover crop. Vetch is best suited to a moist climate free

from extremes of heat or cold during the growing season. Is adapted to heavy well drained soils. The stems are slender growing from 3 to 5 feet or more in length, with about seven pairs of leaflets and a terminal tendril. The flowers are violet purple rarely white and are borne in pairs on a very short stalk.

**Hungarian Vetch.** A fine stemmed annual making a semi-erect growth from 2½ to 4 feet in length and somewhat hairy overall. The flowers are brownish white in color and are borne in groups of from two to eight. Hungarian Vetch is quite winter hardy and is adapted to a wide range of soils, lands with poor drainage and lands that are heavy, sour and white will often produce crops of Hungarian Vetch while other crops have failed.

**Hairy Vetch**, also known as Sand Vetch. The stems are slender, usually growing to an average length of 6 to 8 feet. The leaves are narrow, violet blue borne on long stems in dense one-sided clusters of about 30. Hairy vetch is quite winter hardy rarely winter killing if well established in the fall, adapted to a wide range of soils doing best on sandy or sandy loams but does not succeed in very wet soils.

**Austrian Winter Field Peas.** A true winter variety. Plants resulting from fall seedings pass through a definite period of winter dormancy before growth begins in the spring. The plants are viny, generally similar to other varieties of field peas under average conditions attain a length of 3 to 4 feet. The blooms are purple. The peas are very hardy, zero temperatures do little damage unless freezing and thawing periods are severe. They are adapted to well drained clay and sandy loams. The Austrian pea is used for all types of forage such as hay, silage, soiling and pasture.

**Canadian Field Peas.** Quite similar to the Austrian Winter Field Pea. The stems and leaves are somewhat larger and the blooms are white. The variety is not winter hardy, being adapted only to moderate temperatures. They do best on loams or clay loams but will succeed on most types of soil if well drained.

The Canadian Field Pea is used for practically the same purposes as the Austrian in general farming. Both varieties are usually sown with a small grain crop.

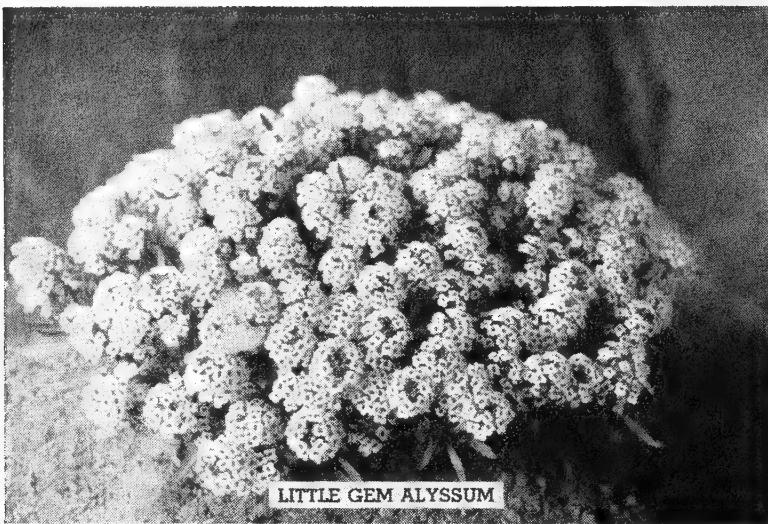
## CUPROCIDE

A modern copper fungicide used as a Seed Disinfectant and as a Tree Spray. Aids in protecting seed and young seedlings from certain soil fungi or damping-off diseases. Aids in protecting deciduous trees and shrubs from certain fungous diseases including Curly Leaf Disease, Peach Blight and Brown Rot. Used in combination with "NURSERY VOLCK" or "KLEENUP." The oil spray acts as a spreader and sticker. See directions for use on the label.

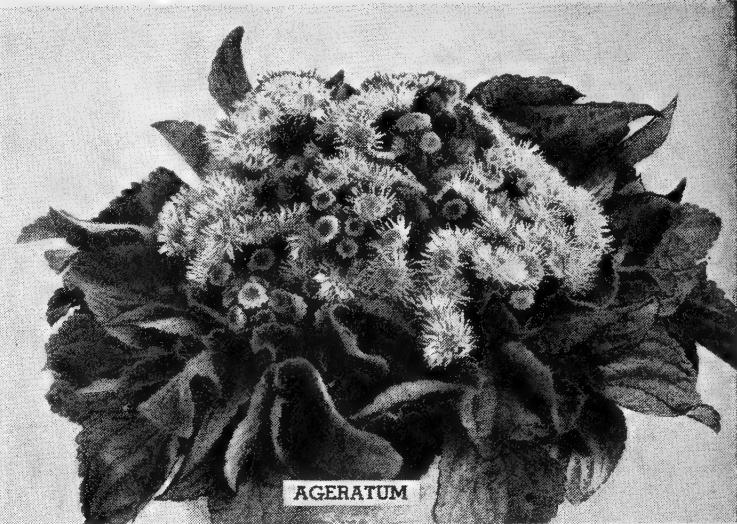


4 oz. package, 35c  
1 lb. package, 95c  
5 lb. package, \$1.25

At your local  
seed store.



LITTLE GEM ALYSSUM



AGERATUM

## FLOWER SEED PERENNIALS — ANNUALS

**ASTERS** are among the most useful, decorative, late summer plants for the amateur gardener. They are easily grown requiring only a normal amount of care for the abundance of flowers they will give in return. In warm sections seed can be sown directly in the garden after first frosts. Here in the Northwest they should be started in flats indoors and plants set out about the middle of May or thereabouts.

Asters prefer a rich soil rather than a sandy loam. They should be cultivated regularly and watered before the soil becomes too dry. Every plant must have plenty of space to develop fully without being crowded. The tall branching variety should be set about 15 to 18 inches apart each way and the medium growing sorts 10 to 12 inches apart, while the dwarf types can be as close as 8 to 10 inches.

**Improved Crego Wilt-Resistant Aster.** Beautiful, large colorful flowers 4 to 5 inches in diameter. Blooms are fully double, about  $2\frac{1}{2}$  inches thick, carried on long, strong stems. The individual petals are gracefully curled and twisted, giving the whole flower an artistic appearance not unlike a Japanese Chrysanthemum. Plants grow about  $2\frac{1}{2}$  feet tall and bloom from late August until the middle of October. Colors: **White, shell pink, deep rose, crimson, orchid, azure blue, purple, lavender and mixed.** **Packet, 10c.**

**Improved California Sunshine Aster.** The flowers are 4 to 5 inches across, are composed of a single row of loosely placed outer petals, which contrast with the unique yellow quill-like center disc. Stems are long and heavy, on plants 2 to 3 feet in height. **Mixed. Packet, 10c.**

**Super Giant El Monte Aster.** Deep glowing crimson blooms composed of daintily interlaced bloom-like petals somewhat similar in form to Giant California, but earlier and much larger. The huge flowers are borne on unusually heavy, non-lateral base-branching stems. **Packet, 10c.**

**Super Giant Los Angeles Aster.** Same type as the El Monte, however, the color is a pure shell pink blending to creamy pink in the center. **Packet, 10c.**

**AGERATUM** (Flossflower). An attractive herbaceous annual and one of the most popular summer flowering plants grown from seed. It is covered with blossoms from early summer until frost and excellent for borders, edgings, or pots. Combines with Columbines, Pink Sweet Williams, French Marigold and Salpiglossis. Varieties: **Blue Perfection Medium**, grows 8 inches tall, compact plant bearing large vivid dark purple flowers, freely produced; **Midget Blue**, a very fine dwarf only two to three inches high. Growth is very uniform and even, the entire plant is practically smothered with small blue flowers; **Little Dorrit**, white, midget.

**Packet, 10c.**

**ALYSSUM.** Annual and perennial, easily grown from seed in any good garden soil and especially suited in rockeries and edges in open sunny situations. The foliage tends to be grayish and the flowers are white, violet or yellow. Grows best in rich, light, well fertilized loam. Combines exceedingly well with Violets, Forget-me-nots, Gypsophila. Varieties: **Benthamicum Martiumum** (hA) Sweet white, honey scented, grows 1 foot tall; **Little Gem** (hA) grows 4 inches, the plants are covered with snow-white blossoms; **Gold Dust** (Saxatile Compactum) (hP) a perennial yellow type, growing 1 foot tall; **Violet Queen** (hA) a beautiful, fragrant sweet Alyssum of bright clear violet hue, holding its colors throughout the hottest, driest summer. Considered best violet all-season edging plant. **Packet, 10c.**

**ANCHUSA** (Sea Buglose) (hP). A hardy, easy to grow perennial and biennial herbaceous plant, growing from 4 to 6 feet tall. Makes a good sized clump of rather coarse, usually hairy foliage, from which rise leafy stalks bearing from mid-July to September or later, loose masses of blue flowers. Plant in the perennial border, combining with Coreopsis, Gaillardia, Orange and Yellow Chrysanthemum. **Dropmore** variety. **Packet, 10c.**

**ANEMONE** (Wind Flower) (tP). Bright-green, finely dissected leaves with large poppy-like flowers,  $1\frac{1}{2}$  inches across in various shades and mixtures of red, white and blue. Blooms from March to June. Sow seeds in warm fall or early spring. Thrives in rich, light garden loam, keep moist during blooming period. Effective in beds combined with Scabiosa, Candytuft. **St. Brigid** Variety. **Packet, 10c.**

**ARABIS** (Rock Cress). Perennial of 6 inches, but spreading out, forming a matty growth. Gray-green leaves forming a sort of rosette with white, fragrant, radish-like flowers borne in loose racemes. Blooms in early spring. Seeds sown in fall or early spring. Grows well in any soil. Attractive in the rock garden, in the regular flower border, or as a border plant.

**Packet, 10c.**

**ARMERIA** (Sea Pink). Perennial growing 8 inches. Bunches of narrow grass-like leaves coming from the base of the plant. Closely contracted heads of small pink, white or reddish flowers. Blooms profusely in summer, but quite continuously throughout the year. Very hardy, enduring a variety of soils, but preferring a rather light, moderately rich loam. Used as a plant along walks, rockeries. **Packet, 10c.**

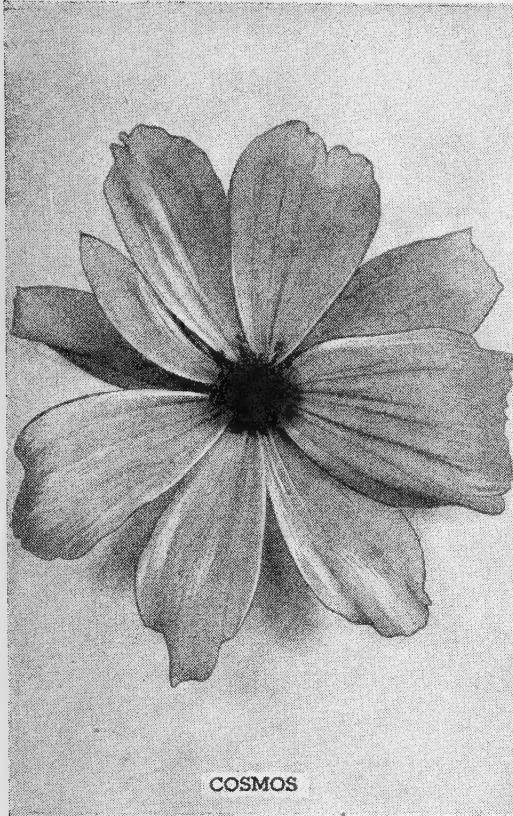
**BALLOON VINE** (Love in a Puff). (hA). Excellent for covering wire fences or trellises, with support will grow to a height of 10 feet. The seed pods are inflated like balloons, and each black seed is marked with a white, heart-shaped spot. Quick growing vines are graceful with their deeply cut leaves and small white 4-petaled flowers. Seed should be sown where the plants are to grow. Prefer a light soil and sheltered spot. **Packet, 10c.**

**BALSAM** (Lady Slipper). (hA). Requires a fertile but light, sandy soil. Grows  $2\frac{1}{2}$  feet. Its double blossoms, from white to red, purple or yellow, are borne close to the stems and overtopped by leafy shoots. Combined with Alyssum or Verbena, is best used as a border subject. **Packet, 10c.**

**BARTONIA** (Blazing Star). (hA). Its large, single, fragrant, 5-petaled, light yellow flowers with bristling stamens open late in the afternoon during July and August. The foliage, in contrast to the blossoms, which produce a metallic effect in the sunlight, is gray and downy. Grows 3 feet tall, flowers 3 to 4 inches across. **Packet, 10c.**

**BRACHYCOME** (Swan River Daisy). (hA). Grows 10 to 18 inches tall with branching stems, making an excellent plant for the rock garden or border, or for edging. Its deeply cut, lacy foliage, compact growth and free flowering quality make it a garden favorite.

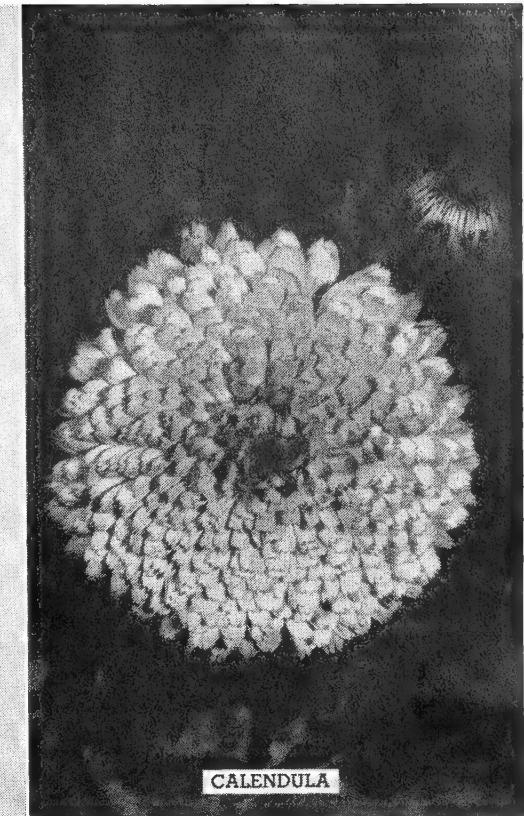
**Mixed colors. Packet, 10c.**



COSMOS



BACHELOR BUTTON



CALENDULA

**BACHELOR'S BUTTON** (Corn Flower). (hA). This old-fashioned hardy annual is very easily grown from seed and is still a great favorite for cutting purposes. Sow the seed in either autumn or spring. Height, 2 to 3 feet. Hardy, rather thistle-like flowers, fine for cutting and border planting. Bloom from early summer until hard frost. Varieties: **Jubilee Gem**, splendid for edging, borders, or cutting. Tidy compact plant, covered with double, rich blue blossoms. **Blue Boy**, excellent rich blue, tall with strong stems. **Double Rose**, same as Blue Boy except in color. **Double Mixed**. **Packet, 10c.**

**CALENDULA** (Pot Marigold). (hA). This is one of the easiest annuals to grow; blooms from May to frost. Plants are from 1 to 2 feet high. Does well under average soil conditions, but responds to a moderately rich loam and in either full sun or semi-shade. Easily started from seed sown in the spring. Grouping—for bedding out; in front of shrubbery; for the mixed border, combining with Delphinium, Shasta Daisy, Salvia or Alyssum. Varieties: **Orange Shaggy**, deep orange shading to lighter center. **Balls Orange**, bright orange shades; **Lemon Queen**; **Double Mixed**. **Packet, 10c.**

**CALLIOPSIS** (hA). Graceful for border plant, supplying throughout the summer an abundance of showy flowers of yellow, crimson and maroon. Growth from six inches to one foot. Seed sown in early spring to summer. Grows in any soil, but prefers a rich, light, well fertilized loam. Grouping—with Coreopsis, Deep-blue Delphiniums, Snapdragons and Salvia. Varieties: **Golden Crown**, a rich orange-yellow with a pleasing fragrance. Nice for cuttings, with 12-inch wiry stems. **Drummondii** (Golden Wave). Yellow with circle of crimson-brown around the eye. **Tall Semi Double Mixed**. **Packet, 10c.**

**CANARY BIRD VINE** (Tropaeolum). (hA). This vine bears curiously cut yellow flowers with curved green spurs, the entire blossoms vaguely resembling canary birds in flight.

**Packet, 10c.**

**CANDYTUFT** (Iberis). (hA). Very showy, branching plant, growing 12 to 15 inches. Excellent for beds, masses, rock gardens and cut flowers. Blooming prolifically in spring, and during other seasons by successive sowing of seeds. Grows in ordinary soil, in sun and slight shade. Varieties: **Coronaria**, giant white hyacinth flowered; **Umbellata Type**, crimson, rose, white, lavender and mixed.

**Packet, 10c.**

**CANTERBURY BELLS** (hB). The real bell flower. Branching plant heavily loaded with large pendant bells. Excellent for flower borders and rockery background. Grown in ordinary soil, fertilized with complete fertilizer. Does well in sun or slight shade. Blooms May and June; growth 3 to 4 feet. Grouping with Scabiosa, Perennial Aster and Lupine. Seeds sown in July to produce flowering clumps next year. Varieties: **Calycanthema** (cup and saucer), **light blue, dark blue, white, rose pink**, and mixed. **Packet, 10c.**

**CARDINAL CLIMBER** (Lobelia cardinalis). (hA). Growth 2 to 4 feet. Erect, smooth, glistening plant with large, dark-green, lanceolate leaves. Racemose spikes of rather large, slender-tubular, intense cardinal flowers. Blooms July to September. Accent plant in rockery, near pools, in perennial border. **Packet, 10c.**

**CARNATION** (tP). Grows from 1 to 1½ feet. Easily winter killed, should be sown in flats during March. Transplant to other boxes when plants are 1 inch high, transfer to open soil when ground becomes warm. Carnations are best planted by themselves. Varieties: **Cha-**

**baud, Double Giant**, cardinal red, deep rose, flesh pink, white, mixed. (Annual). **Marguerite**, blooms four months from sowing, in mixed shades only. **Packet, 10c.**

**CELOSIA CRISTATA** (Cockscomb). (hA). Erect plant, with large leaves, curious spikes of crested or plump, brightly colored fascicles, the effect extending from July until late in the fall. Growth 9 to 18 inches. Requires a moist, rich soil and sun. Should be planted by themselves in beds, in flower borders, or in front of shrubs with dark-green foliage. Sow seed in early spring. Varieties: **Cristata Tall Crimson**; **Celosia Plumosa Fine Feathered Mixed**.

**Packet, 10c.**

**CHINESE WOOL FLOWER** (Celosia Childsii). Plants grow 2 to 3 feet high, are freely branching and bear in profusion elegant bell-shaped, wool-like flowers of scarlet and purplish crimson. **Packet, 10c.**

**CHRYSANTHEMUM** (hA). Attractive long stemmed summer flowering plant, wide varieties of color. Sow seeds in flats and transplant when soil is warm, or sow seeds outdoors after all danger of frost has passed. Plant in rich soil. Grows 18 to 24 inches in height. Blooms profusely throughout the summer months and into the late fall. Varieties: **Coronarium**, tall double mixed. **Carinatum**, single mixed.

**Packet, 10c.**

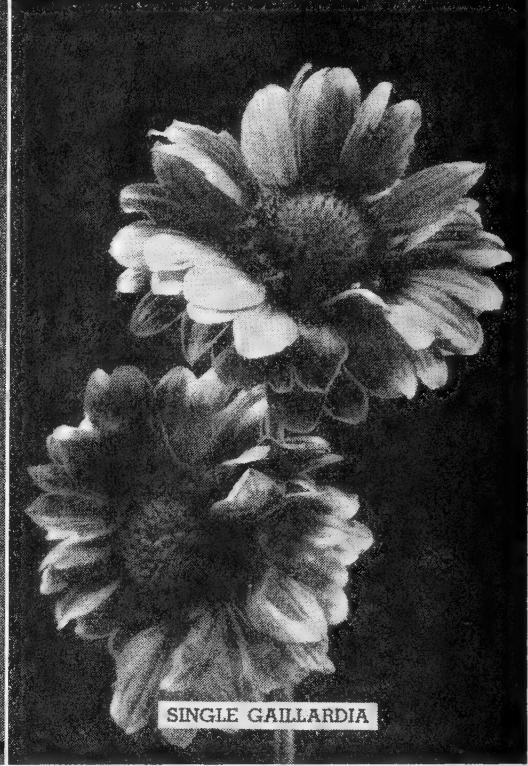
**CLARKIA** (hA). Popularly known as the Rocky Mountain Garland because in form and color it resembles a garland of almond blossoms. Easily cultivated in sunny locations in any light garden soil. It produces graceful, showy blossoms delicately rose or purple. Excellent for mass planting. Plant with Larkspur, Pansies, Nicotiana or Virginia Stock. Varieties: **Scarlet Queen, Salmon Queen, White, Single Mixed, Double Mixed**. **Packet, 10c.**



AFRICAN DAISY



SHASTA DAISY



SINGLE GAILLARDIA

**COBaea SCANDENS** (Cup and Saucer Vine). (hP). Evergreen shrubby climber, growing 10 to 20 feet. Rapid growing with pinnate leaves, solitary, light violet or greenish-purple, bell-shaped flowers, blooming in April and May. Seed should be sown in early spring in moist earth. Good for covering porches, arbors, etc. **Packet, 10c.**

**COLEUS** (tP). Erect, branching plant, grown chiefly for the leaves which are furrowed serrate, or dentate, colored red, yellow, purple, bright green, frequently blotched or variegated; small blue or lilac flowers. Sun loving plant growing from 1 to 2 feet. Requires a rich, fibrous loam. Used in window boxes and as potted plants for sun porches, conservatories, etc. **Packet, 15c.**

**COLUMBINE** (Aquilegia). (hP). Erect, branching plant, with long, slender stems. The sepals as well as the petals are colored, and each of the latter has a downward extension which forms a hollow spur. Should be given only partial sun and protection from wind. Tolerates different soils but prefers rich humus to which bonemeal has been added. Seed sown in spring or early summer will give plants which can be set into their permanent quarters in September. Following spring will bloom abundantly, growing from 1 to 3 feet high. Splendid for the mixed border. Group with Delphinium, Scabiosa, Stocks, Snapdragons, Heuchera. Varieties: **Mrs. Scott Elliott**, long spurred, packet 15c; **Pink Shades**, packet, 15c; **Blue Shades**, packet, 15c; **Silver Queen**, Packet, 15c; **Copper Queen**, packet, 15c; **Double Mixed** and **Single Mixed**, packet, 10c.

**COREOPSIS** (Grandiflora). (hP). Spreading plant, with long, smooth, dark green, lanceolate leaves; large, daisy-like flowers, blooming April to frost. Drought resistant; grows in any soil, but best in moderately fertilized, light loam;

requires a sunny location. Growth 18 to 24 inches. For the perennial and mixed borders, combining with Delphinium, Blue Scabiosa, Blue Larkspur, Gaillardia. Varieties: **Double Sunburst**, large, golden yellow, fully double. **Lanceolata**, golden yellow, semi-double.

**Packet, 10c.**

**COSMOS** (hA). Erect, branched, smooth plant, with finely dissected leaves; medium to large single and double flowers, ranging in colors from white to rosy-lilac. Reaches a height from 3 to 10 feet. Thrives in average soil, but preferring a light, rather poor texture, and flourishing in either sun or partial shade. Seed sown in the open ground in April should bloom in July, and will furnish an abundance of cut blooms during the early flower season. Plant between shrubs; in the background of the mixed border, combine with Shasta Daisy, Lavender, Michaelmas Daisy. Varieties: **Klon-dyke Orange Flare**, deep orange, blooms early; **Early Double Crested** (anemone flowered) mixed; **Early Flowering Mammoth**, light pink, crimson, mixed. **Packet, 10c.**

**CUT FLOWER MIXTURE.** A mixture of easy growing annuals. Assorted colors.

**Packet, 5c.**

**DAHLIA** (hhP). It is easy and fascinating to grow Dahlias from seed and enjoy the surprise of new colors and forms. If seed is started early, plants will bloom the same season. Sow seed in shallow box in March, transplant carefully, and keep soil moderately moist. When all danger from frost is over, plant in the garden. Growth 2 to 6 feet. Require rich, moist, fairly light loam. Appear to best advantage when planted in large beds by themselves, or when planted in the foreground of shrub borders. Varieties: **Single Mixed**, **Double Mixed**, **Coltness Mignon** (Mixed Bedding).

**Packet, 10c.**

**DAISY—African Blue Daisy** (Arctotis). (hA). Branching plant, with thick, gray-green, woolly leaves; wide, daisy-like, white-lilac blue narrow-petaled flowers. Growth 2 to 3 feet. Blooms from June to December. A sun loving plant. Does best in rich, light, well fertilized garden loam. Important in the mixed border, combining with Snapdragons, Stocks, Larkspur, Godetia, Heuchera. **Packet, 10c.**

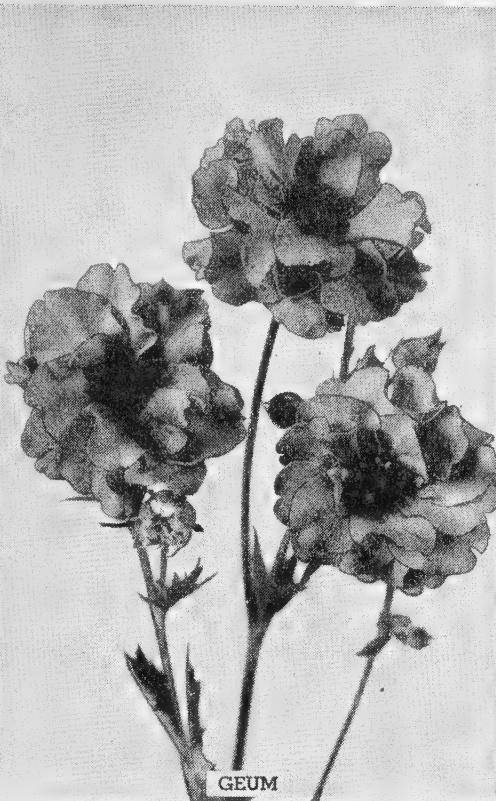
**Double Daisy** (Bellis Perennis). (English Daisy). (hP). Blooming from February to May. Height 3 to 6 inches. Fleshy root, making large clumps of fleshy dark-green leaves, with large, densely rayed heads of white, rose, pink or reddish flowers. Sow seeds in early spring, to give strong plants to set out in October. Used as border plant; naturalized in wild garden and lawns; flower borders. Combine with Narcissus, Winter-blooming Stocks, Heuchera. **Mixed. Packet, 10c.**

**Shasta Daisy** (hP). This popular flower is noted for its keeping qualities as a cut flower. Should be planted in the fall or early spring. Grows in any moderately rich soil in the sun and partial shade. Has smooth, dark green, lanceolate leaves with large, daisy-like pure white, golden centered flowers. Blooms April to September. Height 1 to 2 feet. **Packet, 10c.**

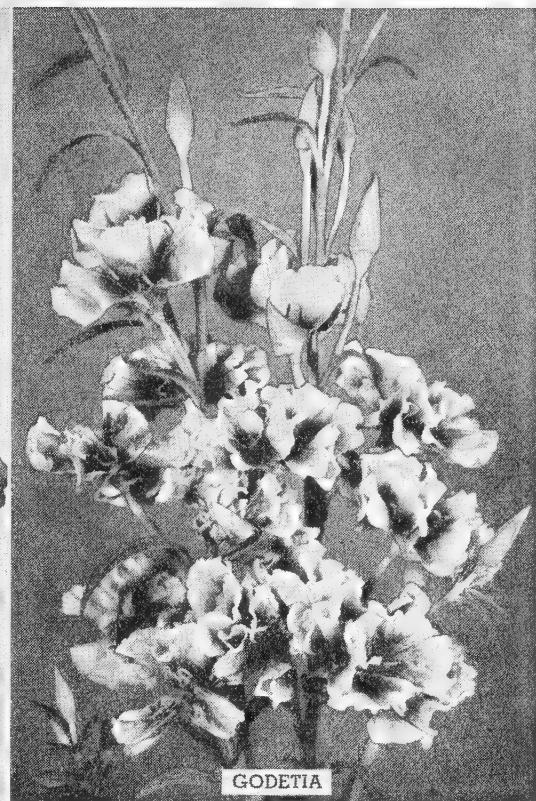
**Michaelmas Daisy** (Perennial Aster). (hP). Erect, tending to make large clumps from the creeping stems, medium green leaves; numerous, daisy-like flowers in dense heads or racemes, white, pink, lavender to deep purple, blooming during summer and fall. Grows from 2 to 6 feet, in sun and partial shade, but preferring mostly sunny positions. Drought resistant. Grows in any soil, but prefers a sandy loam, not too moist. **Packet, 10c.**



DOUBLE GAILLARDIA



GEUM



GODETIA

**DELPHINIUM** (Perennial Larkspur). (hP). One of the finest garden flowers, even casually grown, are extremely hardy and make satisfactory garden plants, but if given a little special care, they reward the grower many times over. Fine plants depend upon sun, circulation of air, and a rich, light, alkaline soil. Plants should stand at least 2 feet apart. Growth from 3 to 8 feet high. Seed of hybrids sown in late summer to produce good clumps in fall; seed sown in spring to produce summer-blooming plants. Combined with Columbine, Salpiglossis, Snapdragons, Stock, Scabiosa, Gladiolus. Varieties: **Pacific Giants Dark Blue Shades, Light Blue Shades, White, Mixed. Packet, 25c.**

**DIGITALIS** (Foxglove). (hP). Their long spikes on stems 3 or more feet high are crowded with large thimble-like flowers all drooping toward one side and beautifully spotted on outer or inner surface. Easy to grow in the garden, so long as they have some shade. Will thrive in any ordinary soil. Seeds sown preferably in summer for flowers the next year. Harbors sow bugs and snails—work Naphthalene in soil around plants. In the perennial border, alone or grouped with Hollyhock, Canterbury Bells, Shasta Daisy, Begonias, Evening Primrose. Varieties: **Purple, Rose, White and Mixed. Packet, 10c.**

**HELICHRYSUM** (Everlasting Strawflower). (hA). Flowers of papery quality which are extensively used for permanent winter bouquets because when they are dried they retain their form and color. Easily grown in a sunny spot in ordinary soil. **Mixed. Packet, 10c.**

**EUPHORBIA VARIEGATED** (Snow on the Mountain). (hA). Growth 2 to 3 feet bearing an abundance of beautiful green foliage, broadly marked with silvery-white and bearing small flowers. Very attractive and ornamental and

can be planted as a background for lower growing plants or in the mixed borders. Sow seeds outdoors after frost is over in place where plants are to stand. Sunny exposure is best.

**Packet, 10c.**

**EVENING PRIMROSE** (Biennial). Opens suddenly with a quick nervous motion that can be seen and heard, exposing yellow corollas that attract night-flying moths. Among the best of the evening garden flowers and are excellent for mixed beds, rockery, and borders. Grow in branching form from 1 to 3 feet tall, producing large blossoms continuously.

**Packet, 10c.**

**FORGET-ME-NOT** (Myosotis). (hB). Will bloom the first year from seed. Small blue star-like flowers borne in clusters on long stems. Their height ranges from 6 to 12 inches, depending on soil and climatic conditions. Form an excellent border with Tulips and other spring blooming bulbs. Adapted to all ordinary soils, but favor rich, moist, light, moderately fertilized soils. **Blue. Packet, 10c.**

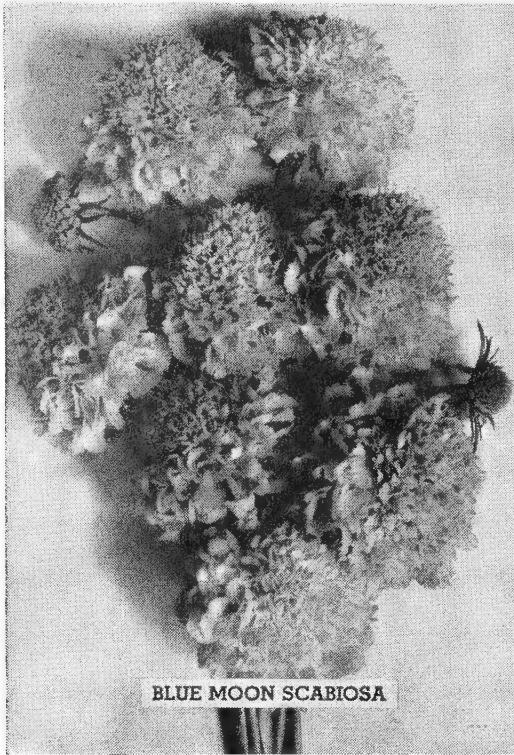
**FOUR O'CLOCK** (Marvel of Peru). (hA). Does not open its flowers until about 4 o'clock except on dull, cloudy days. Well branched plant about 3 feet tall with bright foliage and fragrant long-tubed blossoms of white, red, yellow. Blooms from July to frost. Excellent for planting in front of porch or fences. Will reseed themselves. **Tall Mixed. Packet, 10c.**

**GERANIUM** (Pelargonium). (P). This well-known half hardy perennial will bloom the first year from seed if sown early. Grow in pots and when weather is suitable, insert in soil. Subject to frost injury, so remove and give shelter during cold weather. Grow in sun and partial shade. Varieties: **Zonale Mixed. Packet, 10c. Lady Washington Mixed. Packet, 15c.**

**GAILLARDIA** (Blanket Flower). (hP). Beautiful show plant, remarkable for the profusion, size and brilliancy of its flowers. Continuous blooms from early summer until late in the fall. Grows best in sun, but endures slight shade. Height 1 to 2 feet. Bears large, showy, solitary heads with yellow or reddish rays and purple disks. Flowers on long stems, which makes them ideal for bouquets. Plant in mixed border, combining with Deep-blue Delphinium, Russet Snapdragons, Yellow Geum. Varieties: (Perennials) **Dazzler**, maroon red, golden yellow; Single Mixed (Annuals) **Lorenziana Double Mixed, Single Mixed. Packet, 10c.**

**GERBERA** (Transvaal Daisy) (tP). Large daisy-like blossoms with flower stems rising to a height of about 2 feet. Flowers are excellent for cutting; stand well above a rosette of gray-green leaves and are solid colored in many pastel shades from pale amber through salmon and rose to rich ruby red. Raising plants from seed is not difficult, except that germination is uncertain and careful handling is necessary; for this reason propagation is generally done by cuttings. Best to group Gerberas by themselves in beds or flower borders, but can be combined with Ageratum, Blue Lace Flower and certain colors of Snapdragon. **Mixed colors. Packet, 15c.**

**GEUM** (hP). 1 to 2 feet tall. Best in sun, but tolerates some shade. Hardy plants, with rosette formation of large, rough strawberry-like leaves; long flower stalks, bearing double rose-like flowers. Sow seed in early fall or early spring, produces blooming plants in one year. Grows well in moist light soils; attacked by soil pests, use Naphthalene Flakes in soil. Groupings—looks well with Tall Lobelia, Michaelmas Daisy and Salvia. Varieties: **Mrs. Bradshaw**, blooms all summer, bearing fully double, brilliant orange-scarlet flowers. **Lady Stratheven** is a double yellow. **Packet, 10c.**



BLUE MOON SCABIOSA



LOBELIA



RUSSELL LUPIN

**GODETIA** (Satin Flower). (hA). Grows from 1 to 2 feet tall in sunny or slightly shady places. Erect, slender branching plant; bright green, lanceolate leaves; large expanded, single and double, satiny flowers, white, crimson, pink, mauve, to purple. Seed should be sown in flats, transplanted when soil is warm. Grows in rather poor, sandy soil. Grouping—generally looks best alone, can be combined with Clarkia, Larkspur, certain Snapdragons and Stocks. Varieties: **Dwarf Single Mixed; Tall Double Azalea Flowered Mixed. Packet, 10c.**

**GYPSOPHILA** (Baby Breath). (hA). These light airy plants have a hair-like foliage and produce a very lovely effect in the garden. Excellent with bouquets. Sow seed outdoors in early spring, repeat sowings for longer season of blooms. Thrive in moist moderately rich soil. Does well in rockeries. Varieties: **Grandiflora Alba**, true white; **Grandiflora Rosea**, pink; (Perennial) **Paniculata Alba**, single white. **Packet, 10c.**

**HELIOTROPE** (hhA). Well known and much admired as border and bedding plant and also can be trained for a climber, growing from 1 to 6 feet high. Flowers borne in trusses and are very fragrant, blooming beautiful shades of lilac and lavender. Blooms profusely in summer. Prefers a rich, light loam.

**Packet, 10c.**

**HOLLYHOCK** (Althaea). (hP). Grows 6 to 12 feet in sun or partial shade. Erect plants, with spire-like, simple, hairy stems; large, rough, heart-shaped leaves; large, regular, round blossoms of various bright colors. Grows in any soil, enrich with sheep manure. Subject to rust; control rust with Greenol copper spray. Appropriate along walls, lattice fences, boundary lines, interspersed among shrubs. Varieties: **Double, maroon, rose pink, scarlet, yellow and mixed. Single mixed. Packet, 10c.**

**HEUCHERA** (Coral Bells). (hP). Blooming from June to September, they are valuable for the low border or rockery, growth 12 to 24 inches. In a good loamy soil and sunny location, the plants produce mats of deep green, from which rise slender stalks bearing airy clusters of bell-shaped flowers. **Packet, 15c.**

**HYACINTH BEAN** (Dolichos Lablab). (hhA). A splendid, rapid growing climber, attains a growth of 12 to 20 feet. Bears clusters of hyacinth-like flowers in great profusion, followed by beautiful ornamental seed pods.

**Mixed. Packet, 10c.**

**KOCHIA CHILDSII** (Mexican Fire Bush). (hA). A fast-growing, shrub-like ornamental. The small but dense foliage, which is a clear bright green in spring, and a somewhat deeper shade all summer, turns bronze-red after frost. The plants grow from 1½ to 4 feet tall and are compactly pyramidal or rounded. They are of easy culture in moderately rich soil. Their formal shape and uniform size adapt them for use as a temporary hedge or tall border for walks or drives. **Packet, 10c.**

**KUDZU VINE** (Jack and the Bean Stalk). (hP). A twining vine with large tuberous roots, belonging to the Pea family. In the North it usually dies to the ground in winter, but under favorable conditions, it grows from 40 to 60 feet long each summer. It has large three-part, somewhat lobed leaves, spikes of purple, fragrant flowers, and large hairy seed pods.

**Packet, 10c.**

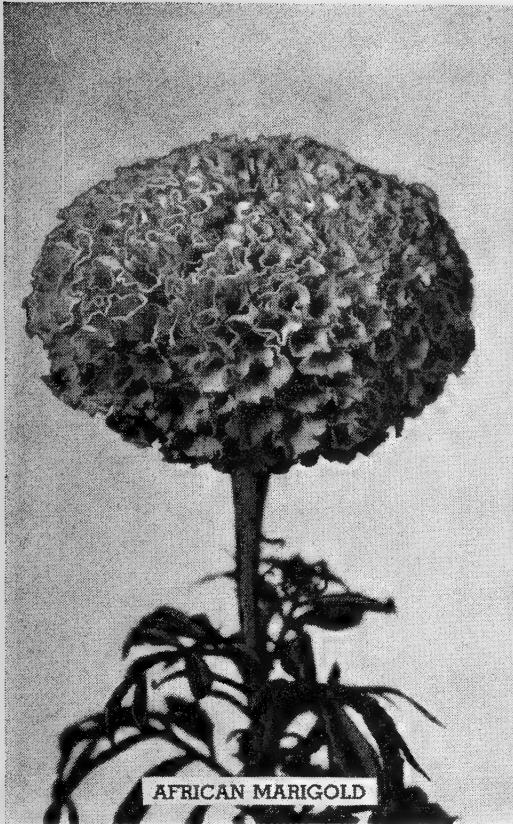
**LANTANA** (hA). Low, compact, full flowered varieties whose flowers in flattish clusters vary or change from brilliant yellow through orange to red. Widely grown as a greenhouse subject, being easily raised from either seed or cuttings, it is excellent as a summer bedding plant, blooming continuously until nipped by the frost in the fall. **Packet, 10c.**

**LARKSPUR** (hA). Grows from 3 to 4 feet in sun and light shade. Erect, bushy plants, with light green, finely dissected leaves. For earlier blooms, plant in flats and transplant. Prefers a rich, well fertilized soil. Use a complete plant food. Varieties: **Giant Imperial Blue, White, Lavender, Rose, Carmine, Mixed. Packet, 10c.**

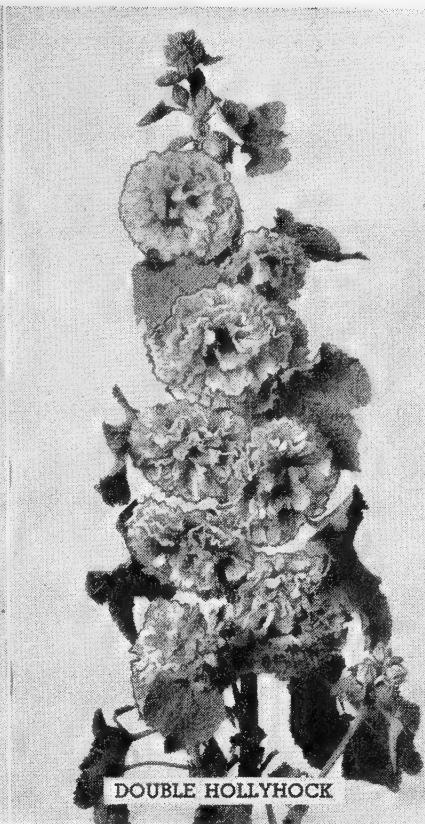
**LINARIA** (Miniature Snapdragon). (A). Flower resembles miniature Snapdragon and in addition has a long Columbine-like spur. Blooms in about eight weeks after sowing. Height 12 to 18 inches. Flowers come in a wide variety of pastel shades. Blooms profusely and continuously until frost. **Mixed. Packet, 10c.**

**LINUM** (Flowering Flax). (hA&P). Growth 1 to 2 feet. Sun and slight shade. Erect, branching freely, with slender branches and flower stems; numerous broadly lanceolate to oblong, sessile, smooth and shining leaves; terminal, salver-shaped flowers blooming in summer until frost. Easy to grow from seeds sown in early spring. For the mixed border combining with Larkspur, Verbena, Heuchera and Ageratum. Varieties: **Annual Scarlet; Perennial Blue. Packet, 10c.**

**LOBELIA** (hA). Grows 6 to 12 inches in sun or light shade. Trailing, or compact, bushy plants; variable, dark-green, bronzed, or light-green leaves. Irregular, small tubular flowers, borne on slender pedicels, varying from light to dark blue. Excellent for borders, rock work and hanging baskets. For best results sow thinly in flats, covering with glass until seedlings are through soil. Transplant into a moist, well fertilized bed. Grouping—Gold Tuft, Iceland Poppy, Coreopsis, Siberian Wallflower and Pot Marigold. Varieties: **Crystal Palace**, compact form with deep blue flowers. **Gracilis**, creeping, with light-green foliage and light blue flowers. **Sapphire**, dark blue, white eye, trailing. **Packet, 10c.**



AFRICAN MARIGOLD



DOUBLE HOLLYHOCK



NICOTIANA

**LUPIN** (Russell Lupin). (P). Distinguished by their deeply cut foliage, which has many lance-like rays radiating from the end of the leaf stalk. The flowers, shaped like those of peas, are borne in great profusion on long-stemmed spikes. The flowers, predominantly blue, yellow, white or rose, are usually borne in May and June. After the first bloom is over, if the plants are cut back, they will often produce a second showing of flowers. Grows about 3 feet tall, thriving in either sun or partial shade. **Mixed. Packet, 15c.**

**MARIGOLDS** are truly the amateur gardener's best friend. They are both hardy and colorful, which makes them ideal for all types of garden work. Blooms start early in July and continue until late fall. They are free from or withstand disease better than most other annuals. These showy annuals may be raised by sowing seed in the open garden as soon as the soil is warm, but a more certain method of procuring fine plants is to sow the seed in flats or hot beds about the first of March.

**Crown of Gold.** Individual plants deviate very little from the average height of 24 inches. The lower branches are clustered near the ground level, while the higher branches are sub-opposite or alternate on the main stem. The plants are extremely floriferous, which gives to a plant the appearance of a large orange top with a green base. **Packet, 10c.**

**Sunset Giant.** The very largest Marigold yet developed, blooms reach a size of 5 inches in diameter. The definite sweet scent of the flowers adds to its value as a cut flower, as well as being a good garden plant. The plants are extremely robust, producing a heavy growth of foliage, with 6 to 8 heavy branches each bearing 3 to 6 flowers. The plant grows from 3½ to 4 feet. **Packet, 10c.**

**Harmony French Dwarf Double.** The neat, dwarf, compact growth, combined with the extremely early, free flowering character of the plants makes this new dwarf Harmony Hybrid one of the outstanding introductions of the season. Flowers are medium size, rather large for the French type, averaging 1½ inches in diameter and do not have the strong Marigold odor. The color range includes the popular yellow and innumerable blotches and striped combinations of golden orange and maroon, and various shades of golden and lemon yellow with the contrasting dark maroon. Plants reach a height of 12 to 14 inches. **Packet, 10c.**

**Signata Pumila Little Giant** is the smallest Marigold yet developed, grows but 9 inches tall. These dainty plants make an excellent border as their brilliant golden yellow flowers bloom profusely throughout the entire summer up until late fall. **Packet, 10c.**

**Dwarf French Double.** Grow 1 foot tall. **Mixed. Packet, 10c.**

**Tall African Double.** An especially fine tall (3 feet) branching, bearing enormous flowers of the quilled type. **Orange, Lemon and Mixed. Packet, 10c.**

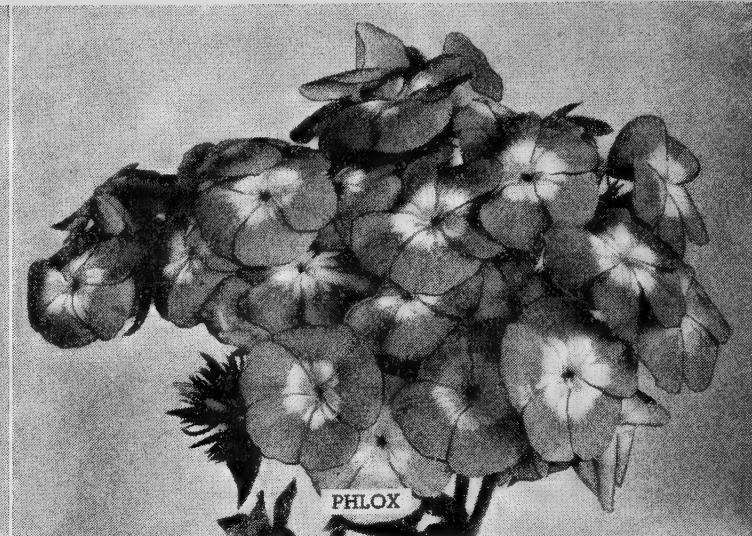
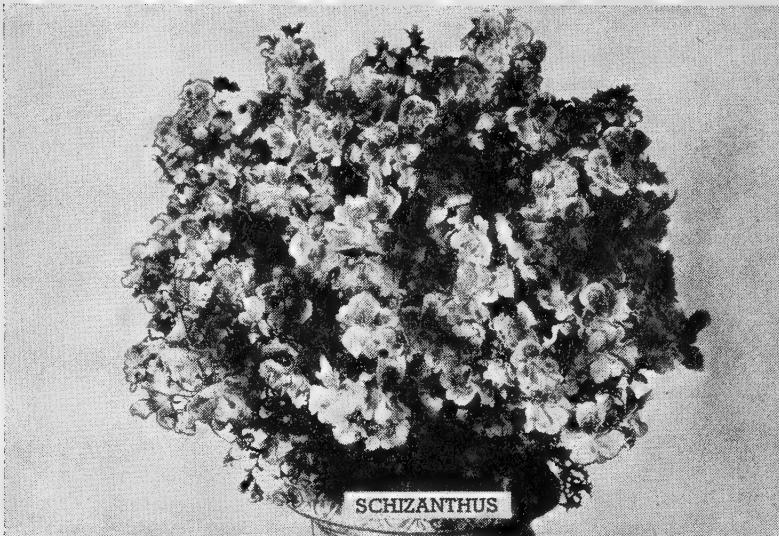
**MIGNONETTE** (Reseda). (hA). Adaptable and growing in either full sun or partial shade; thrives best in cool moderately rich soil. From 6 to 15 inches high. Its vigorous branches spread gracefully and are well clothed with rather heavy, dark green leaves. Plants should be started from seed in the open ground, for they grow quickly and dislike transplanting. Blooming period is from June to frost. Blooms are exceedingly fragrant. For the annual and perennial borders, combining freely with most flowers. Varieties: **Odorata Grandiflora**, white; **Victoria Perfecta**, brilliant red. **Packet, 10c.**

**MOONFLOWER** (Ipomoea). Annuals, but mostly perennials in cultivation. Splendid rapid growing climber. Flowers are beautiful and varied, resembling giant Morning Glories. Foliage is luxuriant and makes a growth of 10 to 30 feet a season. Seed should have outer shell punctured and then soaked in water for 36 hours to germinate it. The large white fragrant flowers expand at night and early morning and the plant blooms June-September. Suitable for covering garages, outhouses, fences, pergolas, etc. Cut down each fall for new growth. **Packet, 10c.**

**MORNING GLORY** (hA). Their large, dark green, heart-shaped leaves make an excellent screen and the trumpet-shaped flowers are borne in great profusion all summer. Rapidly growing in almost any moderately rich soil. Seed should be sown after danger from frost is passed, germination is hastened by filing small holes or notches through the horny coat. Varieties: **Major Tall Mixed**, attains a height of 15 feet or more, mixed colors; **Heavenly Blue**, sky blue shading to white in throat. **Scarlet O'Hara**, flowers earlier and is able to climb without assistance, Stunning 3½ inch flowers of a soft velvety scarlet. Foliage is distinct and the flowers stay open longer.

**Packet, 10c.**

**NASTURTIUM** (hA). Includes climbing and dwarf herbs with showy red, orange or yellow, funnel-shaped flowers consisting of 5 separate petals, the sepals produced into a long spur containing nectar. Has fleshy stems, shield-shaped leaves and bright blossoms which are produced continuously throughout the summer. Seed is sown in the open in the spring. Plants will bloom most prolifically if given a rather poor soil in a North exposure.



**Glorious Gleam.** Color range: salmon, golden yellow, orange scarlet, cerise, cream, orange, maroon and crimson shades, as well as many spotted varieties. **Packet, 10c.**

**Golden Gleam** Nasturtiums are semi-dwarf bearing sweet-scented golden yellow flowers on stems well above the bright green foliage.

**Packet, 10c.**

**Scarlet Gleam** Nasturtiums are semi-dwarf, bearing the flowers well above the bright green foliage on long, wiry stems. Fiery orange-scarlet flowers that are fully double, very large, sweet scented. **Packet, 10c.**

**Mixed.** For those who still prefer the good old fashioned type, we offer the **Dwarf Mixed** and the climbing or **Tall Mixed. Packet, 5c.**

**NEMESIA** (hA). Growth 8 to 12 inches. Has bright yellow, orange and red blossoms, resembling those of snapdragons in miniature. Seed may be planted in flats in March and set out the end of May for early blooms, or may be sown out doors after danger of frost has passed. They should be set close so that the frail stems may support one another. Very effective in window boxes. Grows best in rich, well fertilized, light garden loam. Can be grouped with Clarkia, Salpiglossis, Snapdragons. **Mixed. Packet, 10c.**

**NEMOPHILA** (hA). Grows 6 inches high. If seeds are sown early in spring in a semi-shaded spot in the border, or on the edge of the wild garden, the small bright flowers will appear continuously all summer. Has wide-open or broadly bell-shaped blossoms held on short stems above prettily cut leaves. Seed may be sown from October to March. **Blue.**

**Packet, 10c.**

**NICOTIANA** (Flowering Tobacco). (hA). These stately plants are very fine for background in an annual bed. Produces large, trumpet-shaped blooms until frost. Sow seed March-June in rich moist light loam. Grow from 3 to 5 feet. **Crimson, White, Mixed. Packet, 10c.**

**NIGELLA** (Love-in-the-Mist). (hA). Grows to 1½ feet and has pale blue or white flowers surrounded and partially concealed by the finely cut green leaves. The flowers which last well when cut, are most attractive in mixed bouquets. Seed can be sown in the spring as early as the ground can be worked.

**Packet, 10c.**

**PANSY** (Viola Tricolor). (hA). Has long been grown in beds and borders because of its ease of culture and the wonderful diversity in color and markings. They do well in any good light soil, but prefer a sandy, loamy deep planting where the roots may be kept cool, and a location where they will not be overshadowed by trees or too much exposed to hot dry sun. Planting is best performed in spring or early autumn; it is advisable to sow in June for transplanting in autumn and in late August for the early spring transplants. Sow seed in light soil, cover slightly, and transplant to boxes as soon as large enough. Low growing and blooming from March into fall. Used in mass plantings in the flower border in combination with Alyssum saxatile, Columbine, Yellow Snapdragons, Stocks and Marigolds. Varieties: **Oregon Giant Mixed; Cornflower Blue; Golden Queen, pure yellow; King of the Blacks;** Packet, 10c. **Steel's Jumbo Mixed. Packet, 25c.**

**PASSIFLORA** (Passion Vine). (hA). Evergreen vine growing 10 to 20 feet or more. Grows in sun and partial shade. Rampant in growth, climbing by tendrils; entire or digitately lobed, glistening, light or dark green leaves; large, tubular flowers with flat, expanded corolla. Grows in any soil. Good for covering screens, covering trellises, arbors, etc. **Packet, 10c.**

**PENTSTEMON** (Beardtongue). (tP). Grows 2 to 4 feet, thriving best in open situations in soil well drained but not too dry. Fast growing, bushy plant, branching from the base, medium-sized, bright-green, shiny leaves. Rather large, long tubular flowers of red, pink, coral and lavender. Blooming April to September. Sow seeds in early spring. Fine for the perennial and mixed borders. Combine with Clarkia, Delphinium, Pyrethrum, Shasta Daisy, Verbena. **Packet, 10c.**

**PETUNIA** (A). Very showy and popular plants, effective in beds, borders, porch boxes and pots. They thrive in a mixture of 2 parts of loamy soil and 1 part of leaf mold and require plenty of water during summer. The seeds, which are minute, should be sown in March in light, finely sifted soil, very lightly covered and given gentle heat. When large enough, pot singly, and pinch back the points before they get too high, to induce compact growth. For planting out these potted plants should be gradually hardened off early in May.

**Martha Washington** ushers in an entirely new version. The plants are about 9 inches tall. Frilled portion of flower is about 3 inches in diameter. It is a beautiful blush pink and center portion is strongly veined a rich wine red, deepening in the throat to dark violet. It comes exceedingly true to color and type.

**Packet, 15c.**

**Miniature Petunias Rose Gem and Pink Gem.** These two charming types have filled a vacancy home gardeners have had for years. Where a low, solid bed of color is needed nothing does quite as well as these two varieties of miniature petunias. The plants are neat and compact, 5 to 6 inches in height and smothered with richly colored blossoms about 2 inches in diameter. **Rose Gem; Pink Gem. Packet, 10c.**

**Giant of California** are the largest of the single flowering petunias. The flowers of crimson, white, lavender, violet and pink, are completely ruffled with large, graceful throats. Excellent in beds by themselves or grouped with Dwarf Lobelia. **Mixed. Packet, 10c.**

**Dwarf Giant of California** are a compact form of the above. Especially fine for potting and also go well in a bed with the taller variety. **Mixed. Packet, 15c.**

**Bedding Petunias:** Varieties: **Balcony Blue, Balcony White, Balcony Red, Rosy Morn, Single Mixed. Packet, 10c.**

**Taller Varieties:** **Elk's Pride**, deep purple, Packet, 25c; **Pride of Portland**, pink, Packet, 25c; **Double Choice Mixed**, Packet, 25c; **Double Fringed Mixed**, Packet, 35c.



FRENCH MARIGOLD



HEAVENLY BLUE MORNING GLORY

**PHLOX DRUMMONDI** (hA). One of the most beautiful and easiest grown of our hardy garden annuals. The flowers are produced in large trusses. Grows 8 to 10 inches. Requires a sunny position. Bushy, branching plant with linear-lanceolate, bright-green leaves. Sow seed in March in a rich, moist, well fertilized, light loam for best blooms. Blooms from July to October. Used as a cover plant in rose beds, in the foreground of the shrub border, in large mass plantings in the flower border, or combined with Verbenas, Petunias, Gypsophila, Snapdragons. Varieties: **Rose**, carmine eye; **Scarlet**; **White**; **Crimson**; **Mixed**. **Packet, 10c.**

**PHLOX DECUSSATA** (P). Grows 2 to 4 feet. Stout stems bearing long, dark-green, smooth, oblong-lanceolate leaves; great trusses of soft to brilliantly colored flowers of white, pink, salmon, scarlet, that bloom from June to November. The secret of success in growing Perennial Phlox is to keep the soil moist during the dry season, to provide a mulch of straw, peat, or of leaf mold during winter and summer, and to supply well balanced fertilizers, cut down after flowering. Combine with Scabiosa, Pyrethrum, Michaelmas Daisy, Sweet Williams, Petunias. **Mixed. Packet, 10c.**

**PHYSALLIS** (Chinese Lantern). Growing to 2 feet, bears small white flowers followed by large brilliant red calyxes becoming 2 inches long when the plant is in fruit. It is a perennial and forms long tuberous roots which are not killed by frost and spread all over flower beds. The bright red "lanterns" are valued for winter bouquets, but the plants should be grown only on waste spots where their aggressive attempts to occupy the earth will not become objectionable. **Francheti. Packet, 10c.**

**PINKS** (Dianthus). (A). Grows from 10 to 14 inches high, and bear beautifully colored single and double blossoms in profusion all summer. Blooms are very sweet smelling. For best results seed should be sown in flats and transplanted when soil is warm. Requires a rich, light, fairly moist garden loam well fertilized. Largely used for borders or massed in beds. Excellent for cut flowers. Grouping—can be planted in separate beds or with Snapdragons, Stocks, Carnations, Sweet Williams,

Petunias. Varieties: (Annuals) **Chinensis**, flowers produced in clusters, medium sized, fragrant flowers with fringed petals. **Single Mixed**; **Double Mixed**. **Hedewigi**, velvety flowers, **Double Scarlet**, **Double White**, **Double Mixed**, **Single Mixed**. **Packet, 10c.**

**POPPY** (Papaver). (A&P). Flowers growing from 6 inches to 4 feet, according to type. Perennials are planted in fall and annuals in early spring. All kinds require a well drained, moderately rich, light loam, and not too moist soil. Grouping—effective by themselves or grouped in a mixed border with yellow and orange Snapdragons, Lobelia, etc. Varieties: (Annuals) **Shirley**, height 1 to 2 feet, branching plant with gray-green finely divided leaves; fringed flowers, white, through shades of pink or deep scarlet. **Single Mixed**; **Double Mixed**.

**California Poppy** (Aurantisca), the true California Poppy—color is deep orange. (Perennial).

**Elmonte Tangerine**, deep orange, grows 2 feet high.

**Iceland**, grows 1 to 1½ feet, slender stemmed, with a tuft of bright green leaves; leafless stems bearing single, medium large, delicately fragrant flowers in light yellow, orange, orange-scarlet, rose pink.

**Stanford Giant Mixed**; **Oriental Mixed**, grows 3 to 4 feet, stout, leafy stems, rough hairy, large leaves; very large, terminal flowers, mixed colors in salmon, red, orange, pale pink. **Packet, 10c.**

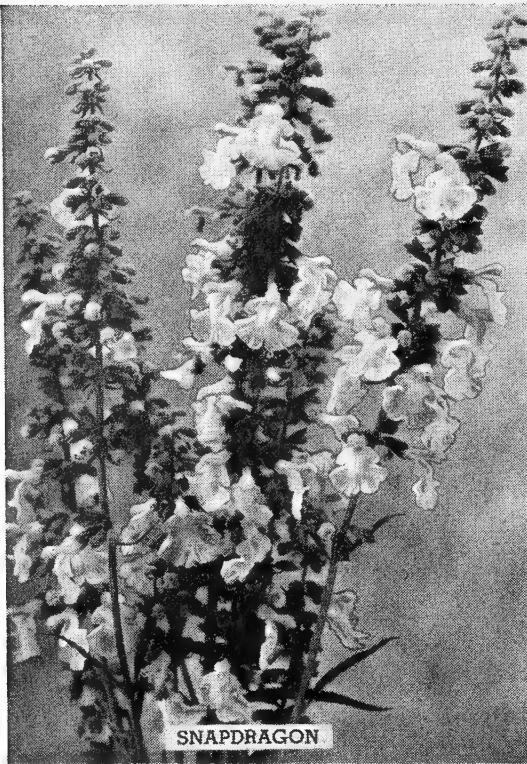
**PORTULACA** (Rose Moss). (hA). An exceptionally fine flower for dry sunny spots where most plants are unable to thrive. A dwarf plant only 6 inches in height that blooms profusely from June to August. Brilliant colors of red, yellow, pink, white, and striped. Sow seed in May, when the ground is thoroughly warmed. In sowing mix seed with many times its bulk in dry sand. Requires a fairly rich sandy loam and the hottest position to give the best results. Used on narrow borders or on dry embankments. Plant alone. Varieties: **Single Mixed** and **Double Mixed**. **Packet, 10c.**

**PRIMULA** (Primrose). (hP). A favorite for growing outdoors in mild climates and very fine for potting, window boxes and rockeries. Seeds sown in early fall usually, or in early spring. Requires a rich, light, moist, acid moderately fertilized loam. Best in a cool, somewhat shady spot. Use Ortho Nursery Volk at time of transplanting to avoid root weevil. Variety: **Malocoides**, grows 8 inches high. Soft, light-green leaves, slender scapes bearing lavender-mauve flowers, blooming December to May. **Lilac**; **Mixed. Packet, 10c.**

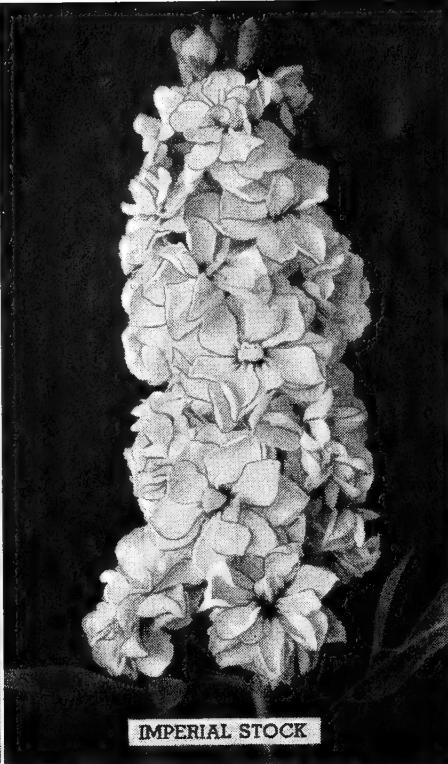
**PYRETHRUM** (Painted or Single Daisy). (hP). Grows 1 to 3 feet. Has long, slender flower stems; clear green, finely dissected fern-like leaves; daisy-like flowers several inches across that bloom from April to August. Sow seeds in early spring in a cool, well drained, rich, loamy soil well fertilized. Used in the perennial border combined with pink and rose Sweet Williams, Iceland Poppy, Sweet Scabiosa, Nicotiana and Coral Bells. **Deep Scarlet. Packet, 10c.**

**SALPIGLOSSIS** (Painted Tongue). (hA). One of the easiest of annuals to grow. Erect branching plants, reaching a height of about 2 feet. Produces funnel-shaped flowers 2½ inches long and wide of velvety texture and in many colors, including rich tones of purples, blues and reds; the interior of the blossoms are strikingly veined, giving a "paisley effect". Blooms from May until killed by frost. Sow in the full sun in fairly rich soil as early as possible and preferably in the place where they are to grow. **Mixed. Packet, 10c.**

**SALVIA** (tP). Grow from 2 to 4 feet high and blooming the first year from seed. The brilliant red tubular blossoms are borne on long stems in racemes or spikes, flowers blooming in summer and fall. Any average garden position suits them, although they are at their best when planted in an enriched loamy soil where they get sun most of the day. Best with background of shrubs having dark-green, glossy leaves. Sow seeds in early fall or early spring. Varieties: **Bonfire**, compact bush 2 feet in height, clear red; **Splendens**, height 3 feet, brilliant scarlet; **Zurich**, dwarf, early mixed. **Packet, 10c.**



SNAPDRAGON



IMPERIAL STOCK



SWEET SULTAN

**SCABIOSA** (Pincushion Flower). (hA&P). Are easily grown in an open sunny position from seed started indoors or planted in the open ground in May. Grow 1½ to 3 feet high. One of the most important annuals for cut flowers, blooms on long, slender stems, which are exceedingly graceful. Grouping—for the perennial and mixed borders combining with Ageratum, Gladiolus, Snapdragons, Perennial Phlox, Sweet Williams, Stocks and Columbine. Varieties: **Azure Fairy**, blue; **Fire King**, scarlet; **King of the Blacks**, reddish black; **Loveliness**, pink; **Double Mixed**; **Blue Moon**, deep lavender blue; **Caucasica Hybrids**, perennial growing to 2 feet, with pale blue flowers. **Packet, 10c.**

**SCHIZANTHUS** (Poor Man's Orchid or Butterfly Flower). (hA). Very showy plant having finely-cut foliage and white, lilac, bluish, or pink flowers. Grows 1 to 1½ feet, blooms May to August. Sow seed in early spring in rich, sandy, well fertilized and sandy loam. **Mixed. Packet, 10c.**

**SNAPDRAGONS** (Antirrhinum). (hA). Seed should be sown indoors in March or April. It may be slow to germinate, but after the true leaves have formed the growth is usually rapid. The small plants can be transplanted to the open as soon as danger of frost is over; they will flower from July until frost if the blossoms are picked as soon as they fade. Seed may also be planted in the open in August, and the seedlings transplanted to pots for winter bloom, or the plants can be covered with a mulch over winter to give earlier summer flowers.

To encourage the growth of flower-bearing side branches, the central bud should be pinched out when transplanting; followed by occasional pinching of other too-vigorous shoots, this will result in a compact oval plant covered with short racemes of flowers.

Rust, the most serious snapdragon disease, is found all over the United States on both greenhouse and outdoor plants. Dusty, chocolate-brown pustules (spore masses) are produced on the under side of the leaves and on the stems. Weekly applications of a good copper spray during the rainy periods and fortnightly application in dry weather will effectively control rust if a start is made early in the season. Beds should be surface irrigated if possible, rather than watered with a hose or sprinkler so as to keep the foliage dry and prevent the spores from being spread by splashing water.

Snapdragons may be grouped, according to color with Scabiosa, Gladiolus, Larkspur, Delphinium, Columbine, Coral Bells, Michaelmas Daisy, Clarkia, Chrysanthemum.

We offer the **Majus Rust Proof** variety in the following colors: **Butter Cup**, canary yellow, shading to creamy yellow; **Copper Shades**; **Pink Shades**; **Scarlet**; **Shasta White**; **Fiery Red** and **Mixed. Packet, 10c.**

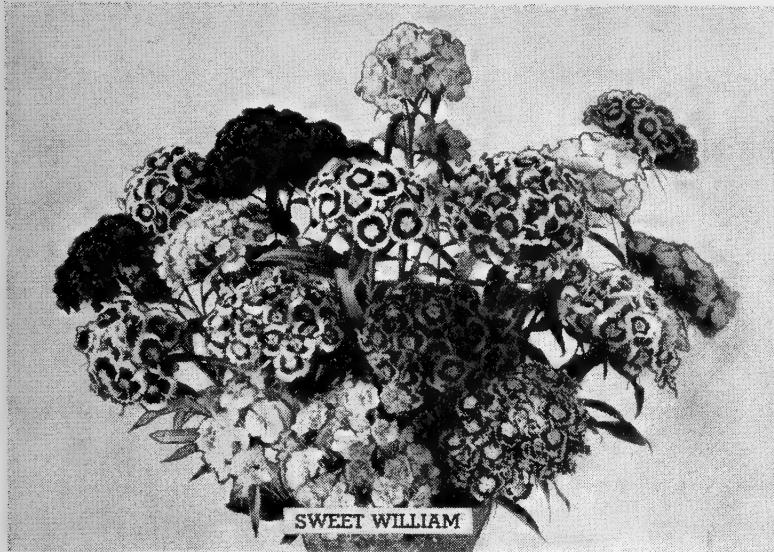
**STATICE** (Sea-pink, or Thrift). (hP). Dwarf plant, growing from 1 to 2 feet. Has narrow leaves in rosettes and small flowers in heads. Grow in any soil and require but little water. Varieties: **Latifolia** (Sea Lavender) (P) produces large branching sprays of minute lavender-blue flowers that are invaluable for cutting; may be dried and used with everlasting flowers. **Sinuata** (hA) an everlasting flower which is increasing in popularity. **Packet, 10c.**

**STOCKS** (Gillyflower). (hA). Sturdy flower spikes (growing 1 to 1½ feet) covered with rosette blossoms in soft colors. Stocks require a rich soil of a sandy, well manured loam. Sow seeds in flats and transplant outside when all danger of frost is over. Seed will produce about 75% plants bearing double flowers. For a mass of all double flowers, set close together and remove the single flowered plants when first flowers appear. Stocks are outstanding

garden favorites because of their delicately colored spikes and fascinating penetrating odor. Grouping—Effective in both the annual and mixed borders, grouped alone, several varieties together, or combined with Daffodils and Narcissus, Violas and Pansies. Varieties: **Double Early Giant Imperial**, very early blooming and grows 2½ feet tall; **Rose**, deep rose pink; **Elk's Pride**, royal purple; **Canary Yellow** (Golden Ball); **Blood Red**; **White**; **Mixed. Virginia Stocks**, grows 6 to 12 inches high and the pods are not horned, **Rose**; **Mixed. Evening Scented Stocks**, grown principally for the sweet perfume in the small, single mauve-colored flowers at twilight. **Mixed. Packet, 10c.**

**SWEET SULTAN** (*Imperialis Moschata*). (hA). Grows 2½ feet tall. The artistic shaped, sweet-scented flowers are borne on long strong stems, when cut and put in water will last for several days in good condition. Sow seed in early spring in ordinary well fertilized garden soil to which lime has been added. Blooms June to September. Grouping—For the annual and mixed borders combining with Perennial Aster, Larkspur, Gypsophila, Scabiosa. **Mixed. Packet, 10c.**

**SWEET WILLIAMS** (*Dianthus Barbatus*). (hP). Among the early hardy plants they are outstanding. Grow 10 to 20 inches tall. Plant either in full sun or slight shade. They form a dense mat of light to dark-green leaves, have dense, round-headed, hairy-petaled, medium-sized flowers. Should be treated as a biennial, sow seeds outdoors in May and transplant them in August to flower the second season. Useful as a border plant and the mixed border combining with Snapdragons, Stocks, Carnations, Petunias, Larkspur. Their large color range makes them excellent for cut flowers. Varieties: **New Port Pink**; **Scarlet Beauty**, orange red; **Dark Crimson**; **White**; **Single Mixed**; **Double Mixed. Packet, 10c.**



SWEET WILLIAM



DAHLIA FLOWERED ZINNIA

**SWEET PEAS** are essentially cool weather plants, and they quickly fade away if the temperature persists for long above 75°. In the sea-cooled areas of the Pacific Northwest, sweet peas can be grown successfully throughout the summer. An early start is highly important. The plants should be well established before hot weather arrives, but if the heat is extreme and persistent, nothing will keep the plants growing vigorously, though it is possible to carry the plants through July and even later if a cheese-cloth shading is erected over plants.

Sweet Pea seed is hard shelled, therefore better results can be obtained if the seed is soaked in water for a day or two before planting.

Dig a wide trench to a depth of 12 inches and after breaking up the bottom of trench fill in with several inches of peat or leaf mold to which add a liberal amount of bone meal; fill in the balance of the trench with good top soil. Tamp the soil down firmly and water thoroughly to the base. Let stand a few days until moderately moist. Never put the seed in too wet soil. Pulverize the surface well by raking, make rows and plant seed about one inch deep, and two inches apart. Do not water until all the seed is up at least half inch.

Thin out at least six inches apart and train on wire or string netting when plants are five or six inches high. Applications of Vigoro during flowering period will add greatly to length of stems and size of blossoms. Keep well cultivated and water only as needed, as excessive moisture will cause the buds to drop. Treat seed with Hansen Inoculation.

#### GIANT RUFFLED SPENCER

##### SWEET PEAS

###### Named Varieties

Packet, 10c

Ounce, 35c

##### PINK AND CREAM

**Ascot.** Clear light rose pink. Very large blooms.  
**Mary Pickford.** Cream pink, faintly tinted to salmon.

**Pinkie.** Large flowers in fours. A deep rose pink.

**What Joy.** Colorful primrose, shaded to soft cream.

#### RED AND MAROON

**Charming.** Brilliant blossoms of rose cerise.

**Flamingo.** Long stems. Flowers are orange scarlet.

**Sybil Henshaw.** Deep crimson flowers of giant size.

**Welcome.** The most dazzling of all scarlets. Strong stems.

#### ORANGE AND SALMON

**Barbara.** A beautiful shade of orange salmon.

**Celebrity.** Brilliant orange of exceptional quality.

**Gloriosa.** A dazzling, clear, bright orange scarlet.

**Pirate Gold.** A beautiful, mellow deep golden orange.

**Tangerine Improved.** Exquisite salmon orange.

#### LAVENDER, BLUE AND MAUVE

**Austin Frederick Improved.** Ruffled pure lavender.

**Chieftain.** A giant satiny mauve (deep lavender).

**Fortuna.** A lovely rich, dark blue with long stems.

**Gleneagles.** One of the very best lavender blues.

**Olympia.** Giant ruffled flowers of rich purple.

**Powerscourt.** Clear pure lavender. Best lavender.

**Reflection.** A lovely sun-proof clear cornflower blue.

#### WHITE AND PICOTEE

**Youth.** Large pure white with margin of clear pink.

**Avalanche.** Glistening white of great substance.

#### GIANT RUFFLED SPENCER MIXED SWEET PEAS

Packet, 10c      1 ounce, 20c

**TRITOMA** (Red Hot Poker). (P). One of the most startling of autumn-blooming plants, with dense cigar-shaped spikes of red and yellow tubular flowers rising 4 to 6 feet. Seed sown under glass in very early spring will sometimes produce flowering plants the following autumn. Set outdoors after all danger of frost is passed in loose, well-drained, rather poor soil in a sheltered but sunny location. **Mixed.**

Packet, 10c.

#### VALERIANA (Garden Heliotrope). (hP).

Grows from 2 to 4 feet. Plant in any garden soil in either full sun or partial shade. Erect branching plant, with smooth, compound leaves. Has dense clusters of small, fragrant white or pinkish lavender flowers. Blooms profusely in the summer. Useful for filling in between shrubs and for covering embankments. **Mixed. Packet, 10c.**

**VERBENA** (hP). Grows 6 to 8 inches; of trailing habit. Densely branching, with dark-green, wrinkled, dissected leaves, with clusters of medium-sized, salver-shaped, white, pink, red, purple flowers that bloom from May into the winter. A very good border plant, also for parkings, foreground of shrub border and in the mixed border combined with Petunias, Shirley Poppies, Snapdragons. Varieties: **Golden Queen**, golden yellow; **Scarlet Defiance**, orange red; **Pink Shades**; **Blue Shades**; **White**; **Mixed. Packet, 10c.**

**VIOLA** (P). Tufted plant growing 4 to 8 inches, bright to dark green leaves; medium-sized single or double flowers in variety white, yellow, lilac, blue, mauve. Very few other plants have as long a flowering period. Succeed best in a deep, well-enriched, well-drained soil with plenty of water during the hot summer. Prefer a light shade during the hottest part of mid-summer days. Varieties: **Jersey Gem**, deep violet blue. Packet, 25c. **Apricot**, Packet, 25c; **Yellow**, Packet, 25c; **Mixed**, Packet, 10c.

**VIOLET** (Sweet Violet). Will thrive in any good, light, loamy soil in shade. Blooming in April-May, sometimes earlier. Variety: **Beautiful Blue. Packet, 10c.**

**WALLFLOWER** (Cheiranthus Cheiri). (hP). A sun loving plant, but endures a little shade. Woody plant, growing 2 to 3 feet, with ribbed stem and dark-green lanceolate leaves; medium-sized that bloom from May to September. Sow seeds in early fall and early spring. Grows in any soil, but prefers a rich, well fertilized, light loam; prune back after flowering. Combine in the mixed border with Anchusa, deep-blue Delphinium, Violets. Varieties: **Siberian Wallflower**, grows 1 foot, bright-orange flowers; **Blood Red**; **Paris Market**, brown; **Single Mixed**; **Double Mixed. Packet, 10c.**



## Rootone

Rootone is a root-forming stimulant when applied to cuttings, seed or bulbs. It is a powdered synthetic plant hormone or growth substance which actively forms roots. Rootone is not an ordinary fertilizer or plant food, since the usual amount of fertilizer must also be applied to the plant.

Rootone is easy to use. Rootone stimulates the natural tendency for roots to form on slips or cuttings, so that rooting takes place in a much shorter time, heavier root systems are formed, and fewer cuttings die from disease.

**1/4-Ounce Packet. 25c  
2-Ounce Jar . . . \$1.00**

## Transplantone

The secret of successful growing is root strength. Transplantone contains the best chemicals known for making roots grow stronger.

When plants are moved or transplanted, many of the feeder roots are broken. The plant usually stops growing until it repairs or replaces these roots. Loss of water causes wilting. Transplantone helps grow new roots and reduces loss of water so the plant starts growing in a much shorter time.

**1/2-Ounce Packet. 25c  
1-Ounce Can . . . 50c  
3-Ounce Can . . \$1.00**

**WILD CUCUMBER** (hA). This is a useful climber where a rapid and vigorous growth of vine is desired for covering trellises, tree stumps, fences, etc. The vine has abundant foliage and is thickly covered with sprays of small white fragrant flowers, followed by numerous prickly seed pods. Grows about 20 feet. Sow seeds late in fall or early in spring where plants are wanted. **Packet, 10c.**

**ZINNIAS** (hA). Are one of the most satisfactory flowers to grow through the summer, as being a native of Mexico, it thrives in even the hottest weather if given plenty of fertilizer and a moderate amount of water. For best results, provide a rich, deep soil and give water when needed. Application of a complete fertilizer at 3 or 4 week intervals helps produce larger, more perfect flowers. Sow seeds indoors in flats, or they may be started in the open at the same time as other hardy annuals. Giant types should be no closer than 18 inches apart; this allows free branching and sturdy plant development. All types blossom from early summer until hard frost. Grouping—Makes a fine effect in mass plantings grouping together varieties that harmonize in color; in the mixed border combine with Anchusa, deep-blue Delphinium, blue Cornflower, Salpiglossis, African Marigold.

**Fantasy Zinnia** flowers are very informal in appearance, composed of a mass of shaggy, ray-like petals, which give a delicate, graceful effect, quite different from the stiff, formal Zinnias to which we are accustomed. Plants grow from 2½ to 3 feet tall. Blossoms are from 2½ to 3 inches in diameter. **Mixed.**

**Packet, 10c.**

**Super Crown O'Gold Pastel Tints** are the very finest large flowered Zinnia introduction in recent years. Strictly a mixture of pastel tints, a wide range of shades, including soft yellow, old gold, light pink, apricot pink, various shades of salmon, peach and buff, lively cerise salmon, as well as pure white and cream. The plants are strong and robust, growing about 3 feet tall, and flowers are borne profusely through the season. **Packet, 10c.**

**Dahlia Flowered** are strong and robust, growing about 3 feet tall and bear many long stems of showy, double, huge flowers. This type is preferred for general garden use, producing a very brilliant mass of color, in bright, intense shades. The flowers are more or less cup-shaped in appearance; the petals, instead of lying flat upon each other, are incurved, producing an upstanding, stiff, somewhat coarse flower. Flowers are from 4 to 5 inches in diameter. We offer the following varieties: **Exquisite**, light rose; **Golden State**, golden yellow; **Crimson Monarch**, deep crimson; **Dream**, rosy lavender; **Oriole**, orange; **Meteor**, true red; **Polar Bear**, white; **Old Rose**, Canary Bird; **Purple Prince**; **Mixed. Packet, 10c.**

**Lilliput or Pompon Zinnia** is among the most popular for cut flower and border use. The flowers are small, compact and symmetrical in shape. 1 to 1½ inches in diameter, borne in great quantities on neat, compact growing plants which usually reach a height of from 12 to 15 inches. If you have room for two rows of Zinnias, sow the seeds of the Dahlia Flowered in the background and Lilliput Pompon in the front row. This makes an effective com-

bination and will give a greater variety of flowers for cutting purposes. We offer the following varieties: **Salmon Rose**; **Canary Yellow**; **Scarlet Gem**; **Golden Gem**; **Lilac Gem**; **White Gem**; **Mixed. Packet, 10c.**

**Mexican Dwarf Zinnia** is by the far the finest dwarf type Zinnia yet developed. The sturdy plants reach a height of not over 1 to 1½ feet and are literally covered with blooms throughout the entire summer. A wide range of strikingly different colors make them outstanding in any flower bed. All sorts of reds, yellows and oranges blended with maroon, mahogany, rust or white. Every individual blossom is an interesting study in itself. **Mixed. Packet, 10c.**

**Elegans Dwarf Zinnia** is not a new type but not generally known by most gardeners. The variety is excellent for border use and can be used most effectively in a solid bed where a lot of color is desired in low growing plants. These Zinnias bloom from early summer until late fall and are fine for cut flowers. **Mixed.**

**Packet, 10c.**

## DIAMOND FANCY LAWN GRASSES

**Diamond Fancy Lawn Grass Mixture.** Prepared from the choicest re-cleaned grass seeds carefully selected for their fineness, their deep rooting, close growing habits and seasonal qualities, producing an ideal dense turf of lasting quality that remains green throughout the year.

This mixture is composed of the correct proportions of Kentucky Blue Grass, Chewings Fescue and Red Top which are required in making a true Diamond Fancy Lawn Grass Mixture.

Sow one pound to 200 square feet.

**One pound, 65c; 10 pounds, \$6.00.**

**Diamond Fancy Lawn with Creeping Bent.** This mixture contains sufficient Astoria Creeping Bent to eventually predominate the lawn. In addition to the Creeping Bent, the proper amounts of Blue Grass, Chewings Fescue and Red Top have been added so as to give a mixture that will produce a fine velvety turf and at the same time allowing the Bent Grass to eventually predominate.

Sow one pound to 200 square feet.

**One pound, 85c; 10 pounds, \$8.00.**

**Certified Astoria Creeping Bent.** This is the most popular of all Bents for lawn purposes. It has a beautiful pleasing green color and a fine velvety texture forming a matted turf that improves with age.

Sow one pound to 250 square feet. **One pound, \$1.25; 10 pounds, \$1.20 per pound.**

**Chewings Fescue.** A hardy fine leaved grass adapted to practically all types of soil produces a permanent close turf and one that will withstand hard usage.

Sow one pound to 200 square feet. **One pound, 85c; 10 pounds, \$8.00.**

**Creeping Fescue.** A fine leaved hardy grass adapted to the same types of soil as Chewings Fescue. This grass is a creeper producing a dense turf of pleasing green and will withstand hard usage. This particular type is becoming very popular with the landscape gardeners.

Sow one pound to 200 square feet.

**One pound, \$1.00; 10 pounds, \$9.50.**



# Western Lawns

## with Diamond Quality Seed

**EVERYONE** desires a thick, velvety lawn and while many do not succeed in getting just this, it is not a difficult task if thoroughness is the keynote in early preparation. In planning and making a lawn keep in mind that it is a long time proposition and that a good foundation (including drainage, soil texture and food supply) is essential in providing an adequate foundation for grass plants. Many times this calls for artificial drainage, thorough preparation of the soil and ample supply of organic matter, grading which is artistically effective as well as practical from the point of view of upkeep and the use of a good seed mixture and plenty of it.

### SOIL PREPARATION

When the soil is already good and drainage conditions are satisfactory, preparation need not be deeper than six inches. If the soil is heavy and inclined to stay wet, it may be necessary to lay 4-inch drain tile or cinder and sand base about 18 to 24 inches below the finished surface. Heavy soils may be lightened by incorporating sand or some form of humus such as peat moss (a bale to 600 square feet worked into the upper 4 inches of soil). On the other hand, a light sandy soil is also improved and given more body by the addition of humus at the same rate.

Natural manures are not desirable in making a new lawn because they are likely to contain many weed seeds which may continue to germinate over several years. A "balanced" commercial fertilizer, such as 4-12-4 formula (that means, containing 4% Nitrogen, 12% Phosphates, 4% Potash) worked into the upper two or three inches of soil at the rate of 4 pounds to 100 square feet will supply available nourishment for the new grass as well as a supply of food later on.

### SEED MIXTURES

The selection of seed is vitally important, as good preparation will be of little benefit unless a proper mixture is selected for your particular locality. It is far better economy to spend a few extra pennies on a high quality seed and have a satisfactory lawn for many years than to sacrifice quality for temporary savings offered by inferior mixtures containing "filler seed". It is recommended to use a complete mixture as the various types of grasses blended in such a mixture are incorporated for specific purposes. A mixture containing two or more "base grasses" and one "nurse grass" is most ideal for Northwest soil and climatic conditions. We are listing below the three main

groups in lawn seed. Your mixture should contain grasses from group one and two.

**Group 1**—Base Grasses—Those which will live for many years and will of themselves occupy the whole area on the existing type of soil if properly maintained. This class is almost invariably slow to mature. This group includes Kentucky Blue Grass, Chewings Fescue, Creeping Bent.

**Group 2**—Nurse Grasses—Its life is short but it plays an important part in grass seed mixtures in that it grows fast and occupies the soil until the slower and more permanent varieties are far enough along to cover the ground. By its nature nurse grass seldom lives over three years and should not compose over 30% of the entire mixture. In this group we list Red Top.

**Group 3**—Filler Grasses—Are varieties not adapted to lawn and turf purposes but used to increase bulk in a mixture or lessen the price per pound. These grasses should not be used if a top quality lawn is desired. This group includes Rye Grasses, Crested Dogs Tail, Timothy and Mesquite.

Here in the Northwest lawns can be planted almost any time of the year (except November, December, January and February) if the soil and seed are kept moist throughout the early growing stages. Because of the importance of keeping the soil moist during this period of growing it is most desirable to sow the seed either in early spring or early fall. Whatever the season, loosen the soil with a steel rake to a depth of one inch just before sowing, then divide the seed into equal parts, half to be sown as the sower walks back and forth in one direction (north and south) and the rest as he walks back and forth at right angles over the same area. A calm day permits more even distribution and a cloudy one assures more moisture in the soil.

As soon as the seed is sown the surface can be raked lightly with a fine tooth rake or cov-

ered with not more than  $\frac{1}{4}$  inch of top dressing. In either case the ground should be rolled (not too heavily) to firm the earth around the seed and promote quick germination.

### WATERING

Watering should be done first gently and with a fine sprinkler to prevent washing. It should be done often enough and generously enough to **keep the soil and seed from drying out**. After the grass is well started the watering should be more thorough and less frequent. **Deep watering encourages the development of deep roots upon which the future success of a lawn largely depends.** Shallow watering or sprinkling tends to bring the roots near the surface where they are quickly affected by severe heat.

### MOWING

In mowing a new lawn set the blades to cut not less than 2 or 3 inches above the ground. As the turf becomes thick it can be mowed closer although the longer the grass can be left, consistent with good appearance, the better for the grass. Shortly clipped lawns dry out fast during hot summer months and when this condition once starts it is very hard to check.

It is best to catch and remove all grass clippings each time the lawn is mowed. If this is not done they will form a soggy mat at the soil surface robbing the soil of Nitrogen (needed to decompose vegetation) and cause a sour condition not beneficial to growing plants.

### ESTABLISHED LAWN

To properly care for an established lawn a few simple rules should be followed each growing season. Early in the spring the turf should be well raked with a steel or moss rake removing all leaves and other material accumulated during the winter. An application of a complete plant food (4-12-4 formula) at the rate of four pounds to every one hundred square feet should be applied early in the spring to afford the lawn plenty of food right from the start. As dry weather comes on watering should be **consistent and deep**. The second application of fertilizer should be made about the first of July at the rate of two pounds per hundred square feet. This should be repeated again near the end of August. After the first rains in the fall a top dressing of one-third peat moss, one-third sand and one-third raw bone meal should be applied over the entire area at a thickness of one-fourth to one-half inch. If these steps are followed each year you will have a lawn that will be the envy of every home owner.



## LAWN WEEDS

Weeds are without doubt the greatest enemy of all cultivated vegetation, be it lawn, vegetable, flower garden or field crop. Invariably they thrive anywhere, particularly on soils so sterile that the crop intended for that area can not thrive.

Unfortunately, many weed seeds have the ability to retain their viability for many years, even when buried deep in the soil. When supposedly "weed free" ground is turned over and worked for planting, weeds will start growing. Weed seed that has been dormant deep in the ground for many years will start to grow when worked up to soil surface. Nature has provided hundreds of ways of distributing these seeds. Some are carried through the air by the wind; others by run-off water after a heavy rain. Still others become mucilaginous and adhere to vehicles, the feet and fur of animals and the clothes of people.

## ERADICATING WEEDS

Many methods of eradication, practical and theoretical, have been offered to the home gardener. Many good ways and many not so good. The facts we set down here are based upon our own knowledge and experiences. No doubt there are other methods equally as good but space does not allow detailed report.

Contrary to many beliefs, Sulphate of Ammonia is not a very successful way to kill weeds as it is a highly concentrated nitrogen fertilizer and in many cases will actually increase the growth of weeds. A good complete fertilizer is good assurance against weeds as a thick healthy turf will crowd out many.

## SELECTIVE WEED KILLER

There are several selective weed killers that can be applied in liquid form and successfully kill weeds without permanent injury to your lawn. The most effective and economical kind is LAWN SINOX. It has been thoroughly tested and approved by many leading agricultural colleges in the United States. It has been used considerably here in the Northwest for two years with great results. It will control nearly all types of weeds—but must be used exactly as directed.

The best results are obtained when the weeds are in the early stages of development and growing rapidly. This makes spring or early fall applications most desirable. Do not spray prior to rain or when the temperature is below 50 degrees or above 80. Lawns should be watered thoroughly for two or three days before spraying unless sufficient moisture is present. Lawns should not be mowed a week previous to spraying.

Apply the diluted material with some type of pressure sprayer. Distribute evenly over the area to be treated. Shallow-rooted weeds usually require only one application. Many deep-rooted weeds, such as dandelions and plantain, may require a second application. Repeated applications are made about two weeks apart, depending upon growing conditions and the speed with which the lawn grasses recover. Any old, tough, remaining perennial plants are easily removed by spot-treating, which is done by using the full strength stock solution and applying directly to the crown with an oil can. The lawn should be watered two days after application provided there has been no rain in the meantime. Either write or come in for more complete information on LAWN SINOX.

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# Farm Seed PLANTING CHART

CROP	Pounds Per Acre	CROP	Pounds Per Acre	CROP	Pounds Per Acre
ALFALFA .....	8 to 15	MAMMOTH RED .....	10 to 15	PEAS—Field:	
BENT GRASSES:		SWEET—Yellow .....	12 to 15	AUSTRIAN .....	75 to 90
ASTORIA .....	7 to 10	SWEET—White .....	12 to 15	CANADIAN .....	70 to 100
HIGHLAND .....	7 to 10	CRIMSON .....	12 to 15	RAPE .....	3 to 5
SEASIDE .....	7 to 10	STRAWBERRY .....	6 to 8	REDTOP .....	7 to 10
BLUEGRASSES:		CORN—Field .....	8 to 12	REED CANARY GRASS .....	6 to 8
KENTUCKY .....	15 to 25	CRESTED DOGSTAIL .....	20 to 25	RYE GRASSES:	
BROMEGRASS, Smooth .....	18 to 25	CRESTED WHEATGRASS .....	10 to 12	DOMESTIC—OREGON .....	20 to 25
BUCKWHEAT .....	40 to 50	FESCUES:		PERENNIAL—English .....	20 to 25
CEREALS:		CHEWING'S .....	20 to 25	SORGHUM .....	4 to 8
BARLEY .....	75 to 100	MEADOW .....	20 to 25	SOYBEANS .....	35 to 60
OATS .....	80 to 100	TALL .....	20 to 25	SUDAN GRASS .....	8 to 30
RYE .....	75 to 100	FLAX—Seed .....	30 to 45	SUNFLOWER .....	10 to 15
WHEAT .....	80 to 120	KALE—1000 Headed .....	1 to 1½	Tall Meadow Oat-Grass .....	20 to 25
CHEAT or CHESS .....	60 to 75	MEADOW FOXTAIL .....	15 to 18	TIMOTHY .....	8 to 10
CLOVERS:		MILLETS:		Velvet Grass or Mesquite .....	15 to 20
ALSIKE .....	6 to 8	FOXTAIL .....	20 to 25	VETCHES:	
LADINO .....	6 to 8	JAPANESE .....	25 to 35	COMMON or GRAY .....	60 to 75
WHITE .....	6 to 8	PROSO or HOG .....	25 to 40	HAIRY or WINTER .....	30 to 40
RED .....	10 to 15	ORCHARD GRASS .....	20 to 25	HUNGARIAN .....	60 to 75
				PURPLE .....	60 to 80

# JOHNNY JONES Builds a Lawn



Now that his new house is erected and the outside workers are off the job, Johnny Jones is ready to start the preparatory work on his lawn in earnest.



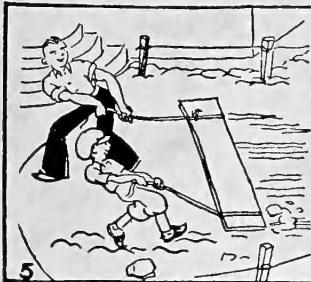
During the excavation no under-soil was thrown out where the lawn was to be, but valuable top soil was saved and piled up at one side ready for later use.



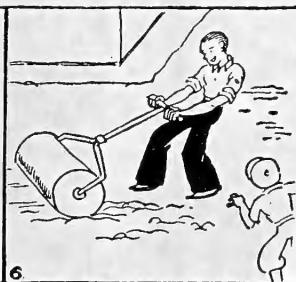
The first step of construction he takes is to fork up the lawn area, rake it, break up earth clods and remove all rocks and debris not conducive to good grass growth.



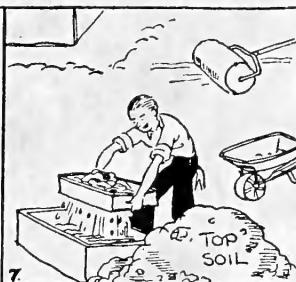
He next considers his under-soil, and finding it too stiff and poor adds necessary lacking elements in the form of a liberal amount of sand and well-rotted strawy manure.



Taking the house steps as the fixed point for his grade he sets up grade stakes strung with stout cord and with Junior's help drags a flat board over the surface to level it.



He has a home-made lawn roller (made according to directions given in the Portland cement book) which he pulls lightly over the surface to compress the under-soil gently.



For his seed bed he spreads a top 2-inch layer of loam, using top soil saved from the excavation, screened together with humus supplied in the form of good dairy manure.



He rakes the seed bed finely, rolls it lightly a second time, allows it to weather so that weed seeds will germinate prior to seeding, and hoes out weeds as they spring up.



Quality grass seed is important. Jones buys his seed from the best store in town, knowing that they will give him the kind of mixture and the quantity he needs.



Being ready to sow, he divides up the area, apportions seed, and broadcasts in two directions, lengthwise and crosswise at right angles in order to cover completely.



After sowing, he carefully rakes in the seed with long light strokes so the tiny grass seed is well mixed with fine soil particles, and then lightly rolls it the third time.



To complete his planting, he waters thoroughly with light spray attached to his garden hose, being careful not to stand on newly seeded area, repeating this for several days.



When the grass is 3 inches high he mows it with a good five-blade mower, and thereafter weekly, being most careful that the mower does not drip oil on the lawn.



To keep maturing lawn conditioned he always waters as needed, and feeds the soil regularly with dependable commercial plant food applied as directed on the package.



He keeps a lookout for stray weeds—eradicating the few that appear with a patent weed gun. Having used good seed and reliable commercial plant food there are few weeds.



This picture of his family gathered to admire his fine lawn is a dream come true and is a fitting and adequate reward for any effort Johnny Jones has expended upon it.

# FOR A MORE BEAUTIFUL GARDEN

To work in . . . To talk about . . .

To show your friends

## INSURE SUCCESS WITH ADEQUATE HELP AND PROTECTION

START YOUR CAMPAIGN EARLY—ORDER NOW WHAT YOU NEED



### BOTANO Garden Dust "151"

A pesticide for use against Aphids, certain Beetles, Powdery Mildews and many other insects and diseases. Comes in special duster package, so you can pump the dust right on the plants. Gardeners like it for vegetables because it leaves no poisonous residue.

10-oz. Duster ..... \$ .49  
20-oz. Refill Carton ..... .79

**ANT-B-GON DISPENSERS** feed alluring, uncontaminated poison constantly. For Argentine and Sweets-eating ants. One or two sets of dispensers usually take care of the average home.

Set of four 1-oz. Dispensers ..... 60c  
Ant Poison to refill dispensers (Refill every three to four weeks):

4-oz. bottle...20c 16-oz. bottle...50c  
1/2-gal. bottle...\$1.50

**BUG-GETA BAIT.** The sensational Bait (containing Methylaldehyde and Calcium Arsenate) that attracts and kills Slugs and Snails on the spot. Also used to control Cutworms, Sowbugs, Earwigs, Grasshoppers and Strawberry Root Weevil.

1-lb. Carton...\$.25 12-lb. Bag...\$.1.75  
2 1/2-lb. Carton...\$.50 30-lb. Bag...3.75  
6-lb. Carton...1.00

**EXTRAX Insect Spray**—The complete, easy to use, home garden insecticide. For use against Aphids and many other garden insects. Economical, too—use one teaspoonful to a gallon of water. Combines readily with **GREENOL** Liquid Fungicide.

1-oz. bottle...\$.35 16-oz. bottle...\$.2.75  
4-oz. bottle...1.00 1/2-gal. bottle...7.95

**GREENOL Liquid Fungicide**—For Powdery Rose Mildew. Contains Spreading and Wetting agents. Use with **EXTRAX** for combination insect and disease spray. Sixteen ounce bottle makes 100 gallons diluted spray.

1-oz. bottle...\$.35 16-oz. bottle...\$.1.50  
4-oz. bottle...\$.60 1/2-gal. bottle...3.95

**VOLCK** Nursery and Garden Spray—Envelopes, penetrates and smothers sucking insects like Scale, White Fly, Mealybug and Red Spider, which are so hard to kill without a penetrating spray. Also a spray carrier which gives insecticidal aid to other insecticides such as "EXTRAX," Nicotine, Pyrethrum, Rotenone and Lead Arsenate. Included with fungicides, it has proved helpful in preventative treatments. Generally diluted 4 teaspoonsfuls to one-third pint per gallon. You'll want this aid to beautify your garden.

4-oz. bottle...25c 1/2-gal. bottle...\$.1.25  
16-oz. bottle...50c 5-gal. container...5.00

**GARDEN VOLCK Spray**—Has a penetrating "VOLCK" base like **VOLCK** Nursery and Garden Spray. Addition of Nicotine increases insecticidal value for more complete spray against sucking insects. Not a spray carrier.

4-oz. bottle...35c 1/2-gal. bottle...\$.2.50  
16-oz. bottle...85c 5-gal. container...10.00

**KLEENUP Winter Spray**—An emulsive Oil Spray for use against certain Scale Insects and certain other garden pests on trees and shrubs during dormant season. Use with Bordeaux Mixtures against Peach Leaf Curl and Peach Blight.

16-oz. bottle...39c 5-gal. container...\$.4.95  
1/2-gal. bottle...85c

**CUPROCIDE**—Get more seeds to sprout by dusting them with **CUPROCIDE**. Protects seeds from decay and damping off. Also use as a fungicide against Peach Leaf Curl, Brown Rot, Shot Hole and Blight on certain trees and vegetables. 1 pound...95c

**CONTAX Pruning Paint**—Don't leave open wounds on trees. Protect all cuts with this modern plastic pruning and grafting composition.

1 pint...35c 1 quart...60c

### NEW! BUG-GETA PELLETS

The new bait in Pellet form for use against Snails, Slugs, Cutworms, Sowbugs, Earwigs, Grasshoppers and Strawberry Root Weevil. **BUG-GETA PELLETS** have many distinct advantages. They are compressed . . . half as much bait goes twice as far. They are easier to use—just scatter on wet ground. Cleaner to handle and more economical.

2-lb. Carton...\$.50 25-lb. Bag...\$.3.60  
5-lb. Carton...1.00

### SPECIAL!

Combination  
Offer

### Rose Spray Kit



Contains 2-oz. bottle "EXTRAX" for Aphids and other insects and 2-oz. bottle "GREENOL" for use against Powdery Rose Mildew. Makes 12 gallons spray.

Complete Kit ..... \$1.00

**CALTOX Insecticide Dust**—Shaker carton makes it easy to use against Sowbugs, certain Beetles, Caterpillars and Worms. An improved formula.

8-oz. shaker...35c 20-ozs...60c

**ORTHO EARWIG BAIT**—Guard against earwig infestations. Because of their unsanitary habits they can become a menace to health. Prepared on a government formula.

2 1/2-lb. bag...50c 6-lb. bag...\$1.00

**LAWN SINOX**—Kills Dandelions, Crab Grass, Plantains, Knotweed and certain other noxious weeds in lawns without permanent injury to grass. Apply with your regular garden sprayer.

1 gallon (covers 8,000 sq. ft.)...\$.5.50

**ORTHO EARWORMICIDE**—It costs only 35c, and takes very little effort, to keep the worms out of 120 ears of sweet corn. Leaves no objectionable residue.

4-oz. bottle...35c 16-oz. bottle...75c

**TRANSPLANTONE**—Contains hormones to form roots, and vitamins for continued growth. Used by leading nurserymen.

1/2-oz. package...25c 3-oz. can...\$1.00

**ROOTONE**—A root forming stimulant for cuttings, seeds and bulbs. Proved commercially and in the home garden.

1/4-oz. pkt. (Treats 450 average sized cuttings)...25c 2 ozs...\$1.00

**ORDER THESE STAPLE INSECTICIDES AND FUNGICIDES TO FILL OUT YOUR PESTICIDE NEEDS.**

**FLOTOX Sulfur** ..... 26 ozs., 25c; 4 lbs., 50c  
**Bordeaux Mixture** ..... 1 lb., 35c; 4 lbs., 69c  
**Calcium Arsenate** ..... 1 lb., 25c; 4 lbs., 60c  
**Lead Arsenate (Basic)** ..... 1 lb., 35c; 4 lbs., 75c  
**Lead Arsenate (Standard)** ..... 4 lbs., 75c

### THESE ARE THE "MUST HAVES" FOR EVERY GARDEN AND HOME

"EXTRAX" for use against . . . . .  
"GREENOL" for use against . . . . .  
"BUG-GETA" for use against . . . . .  
"ANT-B-GON" for use against . . . . .



Many Garden Insects  
Powdery Rose Mildew  
Slugs, Snails, Cutworms  
Argentine and Sweets-eating Ants

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GARDEN SPRAY GUIDE

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